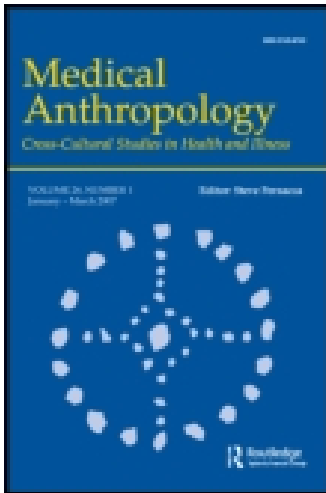




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Theories and Observations on Sexual Selection and Female Choice in Human Beings

Timothy Perper

From a biological viewpoint, theories of female choice and sexual selection are a subset of evolutionary biology and date back to Darwin in 1871. When, as a biologist, I began studying human courtship some 10 years ago, I felt that those theories, perhaps with minor modifications, would offer a reasonable guide for understanding how women select their mates and sexual partners. However, by now, I have reached a very different conclusion. Although these theories derive in part from biology, they also contain extensive but unspoken cultural, personal, and philosophical presumptions which make them less than completely useful. Indeed, if one naively applies those theories to human behavior, it is often like holding a mirror to our own culture, in which we see not only biological ideas and truths, but also the concerns of our own times. In the following, I describe some of the cultural complexities of such theories, and, then, by comparing these theories to what can be observed about courtship and its meanings to people, attempt to develop some theoretical alternatives for interpreting human courtship. Of course, a short paper cannot present a complete review of sexual selection and female choice. However, it may help to begin by describing some difficulties that impeded the study of these topics.

The first is the sheer mass of material written about women's roles in creating and managing sexual arrangements. The literature ranges from Ovid (ca. 1 CE) and Catullus (ca. 80–50 BCE) in Roman times, through Medieval secular writers like Marie of Champagne, Eleanor of Aquitaine, and Andreas Capellanus or like the troubadours, canonists and churchmen, on to writers of the Elizabethan and Valois periods (such as the Seigneur de Brantôme, whose liberalism and sympathy for women are still remarkable), and from thence to the poets and writers of the Restoration, the Romantic period, and the Regency in Great Britain. Furthermore, the scientific literature has grown immensely, starting with Darwin and developing more recently from Trivers' theories of parental investment and, in the social sciences, growing from renewed interest in human sexuality from symbolic, interactionist, and feminist perspectives (e.g., Kelly 1975:31–48; de Brantôme 1594–1614/1933; Singer 1984).

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To make matters more complex, biological and social scientists often approach courtship and mate selection in vastly different ways. Taking the broad interspecies and comparative viewpoint, biologists place mate selection into evolutionary biology and connect it theoretically and empirically to reproduction and natural selection (e.g., Searcy 1982). This line of work is firmly rooted in biological traditions. By contrast, social scientists are rooted in a narrower but more intense focus on our own species, and tend to see women's roles in sexual phenomena as aspects of gender, as related to psychological, economic, political, and historical processes, or as parts of broad cultural phenomena like maintaining a sexual division of labor or cementing social relationships, particularly kinship alliances. In doing so, social scientists tend to create macrolevel descriptions and theories about mate selection set in a purely (or nearly purely) human context, whereas biologists enjoy understanding how and why human sexual behavior and physiology operates in detail and resembles that of other mammals, particularly primates (e.g., Eberhard 1985; Coveney et al. 1984; Price 1984; Duck and Miel 1983; G. Wilson 1987).

Thus, two virtually separate lines of inquiry have emerged, and connections between them can be made only in the face of a reawakened and significant "nature/nurture" debate (Kenrick 1987). Accordingly, the study of female choice in human beings is an interdisciplinary endeavor, which, beyond the usual pitfalls of such work, suffers most notably from a lack of mutual understanding of concepts like reductionism, biological determinism, and functionalism. Moreover, the social and biological sciences differ in what their practitioners consider "proper" evidence. Biologists tend to prefer "hard" evidence from experiments or field observations (e.g., Petrie 1983; Coulson and Thomas 1983). Many biologists would consider citing historical sources such as the *Seigneur de Brantôme* as trivially anecdotal at best and as self-indulgently incompetent at worst. In turn, social scientists return the compliment by treating biology as obviously unnecessary for studying sexuality (De Cecco 1987; Gagnon and Simon 1987; Simon and Gagnon 1968), as only dubiously important (Reiss 1986), or as serving repressive, particularly anti-female, social ends (Bleier 1984; Lowe and Hubbard 1983). Only relatively few recent writers have held that both biological and social scientific insights are needed to understand human sexuality or courtship (Efron 1985; Kenrick and Trost 1987; Perper 1985; Remoff 1980).

Accordingly, efforts to study female choice in human beings are quadruply hindered: first, by an immense and ancient literature; second, by considerable differences in how biologists and social scientists place mate selection into broader theoretical frameworks; third, by differences in what is and is not considered "real" or "hard" evidence; and, fourth, by an unsubdued nature/nurture conflict that touches deeply on roles of women in modern society.

Despite these problems, an effort to understand—and define—female choice in humans may help explain how men and women select their mates, what characteristics they choose, and how biological and cultural constraints limit or accentuate women's capacities to select mates for themselves, rather than having mates assigned to them by others. Furthermore, such efforts have potential practical value clinically: men and women both have difficulty in adjusting to recent changes in sexual mores, particularly changes in courtship (Farrell 1986; Rothman 1984; Turner 1954; the popular literature is immense: see for example Nir and Maslin 1982). Thus,

theoretical, practical, and scientific issues all coalesce when we ask about female choice in any given human society, for example, our own. Although it is not an easy mix to disentangle, I feel that scholars should make the interdisciplinary effort to study how men and women become sexually and emotionally intimate and, especially, to try to understand women's roles in that process.

As a contribution to that effort, I will first describe some results from a large-scale ethological and ethnographic study of courtship behavior in North America (the United States and parts of Canada). Details of the results and methods of this study have been published elsewhere (Perper 1985; Perper and Weis 1987), so that I can summarize them briefly. However, these results do not confirm in any direct or simple way existing theories of sexual selection, as I will suggest in the second part of the paper. Accordingly, a new problem arises: to identify the weakest elements in existing theories, to describe their origins in our cultural conceptions of what courtship is supposed to be and of what women's roles in courtship are, and then to suggest ways those theories can be revised and refined to make them less culture-bound and therefore more generalizable.

THE BEHAVIORAL COMPONENTS OF COURTSHIP

Broadly, courtship may be defined as whatever species-specific behavioral interactions occur between two organisms, and which precede and elicit sexual intercourse. Here, I limit myself to heterosexual courtship, because gay and lesbian courtship is relatively little studied (but see Weinrich 1987). When applied to humans, the definition should refer to *culture*-specific behavior patterns, for I do not wish to beg the question by assuming that courtship patterns in our own culture are universal.

This definition warrants some discussion. First, it does not require judging if a behavior pattern is *necessary* for intercourse. Instead, it focuses on describing events prior to intercourse, and leaves to separate inquiry the question of determining the absolute minimum of interaction needed for intercourse.

Second, in common English, *courtship* retains a formal ring to it, like the word *wooing*. As a general term for all forms of pre-coital interaction, the word may misleadingly evoke narrow or antiquated images (e.g., of a man bringing flowers to his date's house), rather than including modern loci of courtship like singles bars or church-sponsored or entrepreneurial singles groups. Unfortunately, no modern word quite covers the range of such places and interactions. "Flirtation" can be used synonymously, but might better be restricted to public displays of courtship behavior. Hence, "*courtship*" must be understood to refer to the proprieties of establishing sexual liaisons as well as referring to all other events that precede and elicit intercourse.

Third, by "precede," I mean to restrict the definition to the period the couple knows each other. Prior experiences may establish sexual attitudes and ideologies, but I am focussing here on the couple's face-to-face interaction. (The term *elicit* is discussed below.)

Fourth, the definition does not refer to functional or functionalist interpretations for why people court. The reasons for and functions of courtship are extremely

variable from person to person and can change drastically during an individual's lifetime. These reasons may include a need to be less lonely, a desire for children, or an expectation that socially normal people simply must be married. Such functions need empirical study and cannot be established by definitional fiat.

Finally, courtship has formal and informal components. Its formalities include who asks whom for a date, who pays for dinner, and who asks the partner to marry. In North America, these formal patterns are established by social rule and historical custom, and traditionally, men have been considered as initiating formal courtship (Rothman 1984), though these habits are changing, e.g., advertisements placed by men wanting to meet women requiring that the woman call or write to the man. Informal aspects of courtship are also rule-obeying and customary and, among other matters, deal with the principles discussed below for establishing coital intimacy.

The Complexity of Human Courtship

This definition of courtship confronts us with an array of behavior far richer and more complex than what biologists usually study. This complexity is not quantitative; in fact, few data exist comparing the number of ethologically distinct behavior patterns in human and non-human courtship. Instead, human courtship is complex because people assign meanings to their own behavior, so that courtship proceeds, in part, because men and women both share understandings of these meanings (Perper and Weis 1987 described a number of such behavioral meanings; some are discussed below).

However, biologists and social scientists can easily miscommunicate about these meanings. When biologists ask what it "means" that carbohydrate metabolism generates cellular energy, they are asking what it means *about* cells: what does the fact tell us? Somewhat similarly, when a woman, for example, asks what a man's behavior "means," she is asking what it means about him, about her, and about their relationship. Likewise, a social scientist can ask what a certain fact means about a social phenomenon. However, social scientists often intend something different when they ask what a behavior pattern means: what does it mean *to* the participant him- or herself? Such meanings exist independently of any effort an observer makes to understand them in a specific scientific framework, and these are the meanings I refer to when I say that people assign meaning to their own courtship behavior.

For example, in our study of U.S. and Canadian women writing about how to seduce and reject men, one woman wrote "A held glance says 'Hey, I like you'" (Perper and Weis 1987). She is, of course, telling us that eye contact has salience to her during courtship, and so we have learned "about" her. However, in her own internal lexicon, she is also saying that, for her, a given behavior pattern (a certain kind of eye contact) *means* interest in a man. It is these kinds of meanings—held internally by courting couples jointly and individually—that have the greatest importance in understanding how sexual intimacy is achieved.

In essence, these "meanings" are systematic equivalencies between actions (like making eye contact) and semantic and symbolic understandings for the actions.

They are often virtually lexical, at least for many North American women, and can range from meanings assigned to relatively unitary actions like making eye contact, touching, or kissing, through complex attributions of meaning to social setting, ambience, and context. We cannot understand human courtship if we do not understand these equivalencies, for they provide the semantic and symbolic (semiotic, if you prefer) backbone of courtship.

A crucial point now follows. A description of courtship *as behavior and nothing more* will be too thin to capture the meanings allied to behavior. Although such descriptions may be adequate (or all that is possible) when discussing animal behavior, they are assuredly inadequate for understanding human courtship. For example, a woman wrote that during courtship she would “. . . try to snuggle up to him or lean against him because then he'd put his arm around me” (Perper and Weis 1987; Perper 1985:134–135). A purely behavioral description of this event (e.g., that “She moved closer and he put his arm around her”) omits the central component of their interaction: her belief that her action *caused* his response.

It is not a rare opinion. We called it the Woman Starts, Man Responds theme (Perper and Weis 1987) and it was spontaneously mentioned by 49/117 = 41.9% of women providing essays on how to seduce men. This belief—and often it accurately assesses what happens when a woman makes an overture—is central for understanding how women describe and interpret courtship. If we saw only behavior, we might not understand how she put her seductive intentions into action. Moreover, her comment teaches us that if female choice exists, then it transcends mere passive rejection of disliked or unsuitable men, but includes active overtures made to men whom she likes. Yet, this crucial inference can be made only if we attend very carefully to the meanings women give to their own courtship behavior.

Accordingly, the events that precede and elicit sexual intercourse have two co-occurring, but analytically distinct components. One is the sequence of behavior as behavior: the flow, over time, of looks, turns, touches, caresses, and kisses that can culminate in sexual intercourse. The other is a simultaneous flow of meanings created for these events by the participants. As in the eye contact example above, these may be relatively simple equivalencies between actions and meanings. However, they also refer to far deeper questions of who chooses whom, and of who initiates, maintains, and escalates courtship towards intercourse. Such meanings are *not* mere epiphenomena on top of behavior.

Nonetheless, if a description of courtship focuses solely on such meanings, it will lack concrete grounding in the actual events of courtship. In this, sexuality and courtship have a locus in the body that is not a mere social accident nor a socially constructed addendum to a more basic stratum of meaning. To be sure, courtship deeply involves behavior patterns which receive specific meanings. But courtship is *also* a set of sexual and emotional meanings and intentions that necessarily involve bodily expression and realization. One cannot have one without the other: intentions alone—for example, as hopes, ideas, desires, plans, wishes, or expectations for a mate and a love affair—are not the same as intercourse, while behavior alone—for example, in the mimicked enactment of a love affair by an actor and actress on stage—does not involve, for them, the meanings that genuine courtship has for its participants. Instead, in real courtship, sexual and emotional meanings and intentions must be enacted behaviorally, and these behavior patterns must be

appropriate personally, culturally, and symbolically for communicating those meanings. If such a two-way street exists between behavior and meaning, then we can speak of courtship as defined above.

An example from a different field may illuminate a subtlety here. Reedy and Reedy (1987) described a complex set of semantic meanings associated with hand and arm positions ("mudras") of statues of several deities in a Tibetan Buddhist monastery. In a sense, each mudra is a kind of "embodied" iconography that uses specific body postures to identify the deity represented by the statue. Here, body posture is serving a nearly lexical end: *this* hand and arm position mean *that* particularly deity. (Body movement, as in the dance, can do the same: Humphrey 1959.)

Courtship too involves an embodied iconography of sexual interest and reluctance, of who is causing what to happen, and of choice of partner (of course, the equivalencies are not as specific as in the Tibetan example). Still, when that woman wrote that a glance means she likes the man, her statement is as iconographic as a mudra. By *itself*, eye contact does not "mean" sexual or emotional interest; it can also "mean" polite interest, attention, hostility, or incredulity, among other possibilities. Nonetheless, since courtship creates a context of increasing sexual intimacy she can use a specific bodily action to convey a specific meaning while simultaneously being fairly sure that the context limits the range of possible meanings down to the one she wants.

However, one senses that the embodied iconography of a Tibetan mudra is arbitrary in the Saussurian sense that no apparently *necessary* connection exists between the hand/arm position and the identity of the deity. In another religious system, other meanings—or none—might be communicated by the mudras Reedy and Reedy (1987) describe. Yet, as courtship proceeds towards intercourse, its embodied signals, like eye contact, touching, and snuggling, become less and less arbitrary, for sexual intercourse itself involves close and intimate physical contact. So, unlike the mudra, courtship involves attaching powerful emotional and semantic meanings to bodily actions that *are* necessarily attached to sexual intercourse.¹

Accordingly, the complexity of human courtship resides not in its ethological details, but in an immense set of emotional, semantic, and symbolic meanings that North Americans (and other peoples) have attached to the transition between relative strangerhood and being coupled. If female choice occurs in humans, it must occur embedded within this framework of meaning. It cannot be treated as mere ethology or mere behavior, if, by "mere," we mean only the visible bodily actions taken by a courting couple. Thus, the definition of human female choice must be sought in places that are professionally alien to most biologists—in the meanings that people create for sexuality, and which, in turn, are inevitably linked to the need for embodied sexual intercourse.

THE COURTSHIP SEQUENCE

It follows that human female choice can be studied only by careful observation of courting couples and by detailed analyses of what they believe happens during courtship. However, relatively few such descriptions exist in the scientific literature.

(By contrast, some excellent descriptions exist in the arts.) Givens (1978, 1983) has provided one; in many ways it corresponds to my own findings, but our basic questions were very different. Jesser (1978) and McCormick (1979) were among the first scholars to document active female participation in courtship, as Remoff (1980) confirmed. Moore (1985) published a detailed and very valuable description of nonverbal behavior patterns enacted by women during courtship. Other studies, many reviewed by Perper (1985), tend to be laboratory or questionnaire investigations of attractiveness or of nonverbal communication, and are not clearly relevant to how meanings are established and communicated during real courtship. Very unfortunately, we seem completely to lack cross-cultural descriptions of how sexual intimacy is achieved.

My own work used field observations in a variety of settings plus extensive interviews with men and women (Perper 1985). The initial stages of courtship—when emotional and sexual interest develop—can often be observed in public (at parties, restaurants, singles bars and the like). Later stages—which involve sexual intimacy—cannot be observed directly, but can be reconstructed from interviews, from written material provided by informants, and from scientific and artistic descriptions. Together, these sources provide a basis for describing how sexual intimacy develops between near or complete strangers.

I will next describe the sequence of events that occurs when men and women meet and become sexually and emotionally interested in each other (Perper 1985:75–111). The sequence is quite regular, and is repeated over and over by courting couples. Its final result is intensely focussed sexual and emotional interest that can easily lead to intercourse. The theoretical reason for observing this sequence is that it represents the period when mate choice actually occurs. One can see directly who chooses whom, and how. In particular, one can see how women select and reject potential sexual partners. Furthermore, the sequence allows us to understand how sexual meanings can be translated into behavior and vice versa. The sequence contains a number of marker events or “escalations” that are very important for establishing intimacy. These include the initial approach, talking, turning and changes in eye contact, touching, and body movement synchronization.

The Approach

The sequence begins when one person, often the woman, physically approaches the other person. For example, a woman sees an “interesting” man at the hors d’oeuvre table at a party, and she goes to the table herself. She has thereby placed herself within talking range, even if she does not open the conversation. Other women will approach a man and begin a conversation without waiting for him to start. Likewise, a man may move closer to a woman and start to talk.

The approach only sounds simple. Single men and women describe it as often quite difficult, because the possibility of rejection is always very real. Before approaching a woman, men often perform a variety of what may be displacement activities, like fidgeting with a glass or a plate, swivelling around on the barstool, or playing with an item of clothing. Often, the man may turn repeatedly towards the

woman, looking at her, and hoping for some kind of reciprocation, such as a returned glance. By contrast, women's approaches to men may be equally emotion-laden, but often occur without such displacement activities. However, the woman may spend a fair amount of time talking about the man with her friends or, if she is alone, thinking about how best to approach. As Givens (1978) has stressed, there is a great deal of tension and anxiety during these early stages of courtship.

Yet, such an approach is necessary, for, without it, no further intimacy of any kind can develop. One response to this fact is that men, in particular, have developed some highly complex "opening lines" which, they hope, will guarantee or create the woman's interested attention (Murray 1985). I have suggested elsewhere that some men believe, implicitly perhaps, that the opening line exerts a magical influence over the woman (Perper 1985:203–206). Clearly, these lines have internal meanings that transcend any socially facilitory effect they might have, since many are quite offensive (e.g., "Is that really your hair?" Kleinke [1981]). At the least, the existence of such lines implies that an ethologically simple event—the approach—has been imbued with considerable emotional meaning.

The person approached has only two options. One is to respond positively, by opening a conversation or by reacting nonverbally, e.g., by turning slightly or smiling. The other is to ignore the person who has approached, thereby to communicate lack of interest (which may be accentuated by a polite or blunt verbal rejection). There is no middle ground whereby the person approached can say "maybe."

The overall sequence has many of these "up-or-out" stages. Because they have important effects on the sequence, I called them "escalations" (Perper 1985:87–92). Formally, at an escalation, the person receiving an overture can either accept it and the higher level of intimacy it brings, or reject it and reduce intimacy. Empirically, at an escalation, no way seems to exist for maintaining the prior level of intimacy.

Furthermore, if the woman made the approach, she has behaved proceptively (Beach 1976). For women, proceptivity refers ". . . to any behavior pattern a woman employs to express interest in a man, to arouse him sexually, or to maintain her sociosexual interaction with him" (Perper and Weis 1987). Unfortunately, no equivalent term exists for male behavior. The importance of proceptivity is that women *select* men whom they approach; empirically, women do not approach men at random at a party and start to talk. So, when a woman proceptively approaches this man and not that, she has *de facto* made a selection. On the other hand, if the man approaches her, she also decides to accept or reject. If, for whatever her reasons, she finds him "uninteresting" and turns away, she has selected him out. Or, if she responds positively to him, she has given him a chance to proceed. Either way, she makes the choice.

Now, a woman's decision to accept or reject a man's initial overture certainly seems to be a form of female choice. However, we encounter a conundrum that will follow us throughout this essay. Essentially identical choices are also made by *men*. If she approaches him at the hors d'oeuvre table (or anywhere else) but he thinks that "she is not my type" and therefore ignores her overture, he has made a choice just as surely as she would, had their roles been reversed and she had rejected him. Likewise, if he smiles and talks to her, he has made a choice just as surely as she would, had he approached her. By considering courtship at this level of microscopic

behavioral detail, we find that any behavior pattern enacted by women that might be identified as "female choice" has an identical counterpart in men's behavior. In brief, the sequence involves a kind of behavioral symmetry that ultimately requires that we define "male choice."

Some male readers may not believe that women are proceptive or that men reject such women. Indeed, quite often men do not believe, for example, that a woman's proximity to them at an *hors d'oeuvre* table could be deliberate. In various ways, many men have said to me that "She was just standing there, so I started to talk to her." Men's inability to decode (or, perhaps, to trust) women's proceptive behavior seriously impair their abilities to meet women, a problem that arises in many singles groups. Still, it seriously misrepresents women's behavior to say that she was "just" standing there, for the observer can readily see that before she approached him, she scanned the other men in the group and made a clear choice to approach one man in particular. And it is equally evident observationally that many men *do* reject women who make proceptive overtures (Perper 1985:88–92, 140–144 gives examples). Thus, the approach raises many of the theoretical issues that surround female choice in humans. As the sequence proceeds, additional issues also appear.

Talking

If the person approached accepts the overture, the two people begin to talk. Thus, the sequence opens nonverbally, with the approach itself, and talking is a *response* to the approach rather than being its first step.

Topics of conversation are very diverse, and often pertain to local or personal facts (ranging from "What did you think of that sociology exam?" asked in a college bar, to "Where do you work?" asked at a party, to queries and replies about hobbies, family, travel experiences, pets—in short, anything that will keep the conversation moving). Male and female informants often say that these conversations are banal or are "mindless badinage," and a naive stranger listening in might readily be impressed by their seeming vacuity. However, these conversations are often highly complex efforts to seek areas of common interest, and their overt content is often not the sole point. Instead, if the two find a topic of mutual interest (e.g., model railroading) what is important is not sharing information, but the *mutuality* of their interest. They have "something in common," as the cliché goes. Furthermore, by discovering mutual interests, possibilities for meeting again are created. More recently, fears of acquired immune deficiency syndrome (AIDS) have provided new topics, which, paradoxically, allow open discussions of sexual beliefs, particularly, sexual reluctance (Seeley 1987).

So, despite cynicism about mindless badinage, the express hope of most informants is to find an "interesting" partner, with whom there is mutuality of interest in a subset of the "little things" in life, like jobs, food, pets, families, music, and leisure time activities. These, the social scientist will recognize, are not vacuous at all, but are the symbols and metaphors of *domestic* life in North America. It is therefore not surprising that as the sequence develops, the conversation may shift explicitly to love, marriage, and sex.

These conversations also act as selective filters. A man talking to a woman he privately calls an "airhead" may contemplate sex with her, but little more. ("Nice house, nobody home.") A woman talking to a man she thinks is a "jerk" will probably contemplate neither. Again, both men and women make positive and negative decisions based on how these conversations go.

Turning

If the two have found a congenial topic, their enthusiasm and interest in each other grow. The interaction has started to have an "electricity" or is "good chemistry," metaphors that refer to a growing excitement—it is not yet full sexual arousal—that increases their mutual attentiveness. As interest grows, the two now slowly turn to face each other fully. When strangers talk in North America, they typically adopt a wide "V" so that they look past each other. However, with intimacy comes a shift that closes the angle, and ends with their shoulders parallel.

Typically, people turn gradually and incrementally, rather than all at once. Moreover, each small turn is mirrored by the partner, so that turning is mutual, rather than being led by one person. When only one person turns fully or partly, the couple will fall into the "crossed-T" position, where the "T" represents the angle of their shoulders. Only rarely does this position last very long. Either they finally face each other, or the turned partner turns away to re-establish the "V." Thus, each small increment of turning is an escalation, because it requires reciprocation lest the sequence break down in rejection. As with the approach and with decisions about conversations, both men and women initiate turning, and can refuse to accept turning.

Moreover, as turning proceeds, the quality of eye contact changes. Many studies of nonverbal behavior lump all eye contact into a single category called "gaze," thereby not distinguishing among different kinds of eye contact and the different meanings they have (Perper 1985:271, 280–281). During non-courtship conversations, the speaker tends to glance around while the listener gazes at the speaker's face. When the second person speaks, the pattern reverses (Duncan 1983). However, as the courtship sequence progresses, the gaze is kept more and more on the partner's face and body, no matter who is speaking. The gaze drifts slowly from the partner's eyes to the mouth, hair, shoulders, torso, and back to the eyes.

People in this state are remarkably hard to distract. If, at a bar, the bartender asks if they want another drink, they may re-order barely glancing at him. Even more tellingly, the man will ignore other women to focus solely on his partner. The saying is that "he has eyes only for her." Performed by people facing each other fully and talking about something that interests them both, eye contact now conveys a powerful message: "Hey, I like you."

Touching

Perhaps the most meaning-endowed escalation in the sequence is the first touch. Its timing and precise degree of intimacy in part determines if the sequence will

continue to full body movement synchronization. Moreover, men and women differ strikingly in what touch means to them. It is also strongly, and non-arbitrarily, linked to sexuality itself.

Women often proceptively initiate the first touch, usually after the couple has turned at least partways towards each other and are talking interestedly. It can occur as a light brush with her hand (often with the palm down and fingers together); it can be more intense, e.g., holding the man's hand while "reading his palm" (Perper and Weis 1987); or the woman can move closer to him, thereby ensuring contact the next time he moves his body. Touches are sometimes preceded by what ethologically appear to be intention movements. For example, if they are sitting facing each other at a table, she may extend her hand roughly half-way across the table and let it rest between them. Such "reaches" are made directly towards the partner and are often accompanied by full eye contact.

If the man does not reciprocate her touch or if he withdraws or stiffens, the sequence will rapidly de-escalate. Eventually the two will turn from each other and may even stop talking. Some women will make several touches before de-escalating, but continued touching in the face of male non-response seems very rare. Likewise, if the man does not reciprocate the woman's reach, e.g., by reaching out himself and perhaps touching her hand, she will eventually withdraw her hand, and the sequence will de-escalate. Quite frequently, eye contact is broken as the hand is pulled back.

These observations illustrate a crucial characteristic of the sequence. Intimacy develops not when one person performs certain behavior patterns (e.g., making eye contact, touching) but only when the *partner* reciprocates and responds positively to the overture. Hence, intimacy increases through "escalation and response" (Perper 1985:87–109), wherein the man reciprocates the woman's reach by taking her hand, she squeezes it slightly and leans forward, and he, in turn responding to *her* escalation, also leans forward towards her. In this interchange of signals, a positive feedback loop has been established between them, in which one partner's overture elicits a somewhat more intimate reciprocation, which becomes an escalating overture to which the partner responds. Thus, the entire sequence is built by step-wise, reciprocated increments (Perper 1985:106, Figure 5).

Many women can describe these touches in detail. Women's touching is nearly never "casual," although some women (and men) will regularly touch anyone they are talking to. Summarizing many women's feelings, one woman said, "I never touch a man accidentally, only incidentally." It is clear in interviews and in written material that women intend to convey warm interest and rapport by touching, and see these as major meanings for touch.

Men's responses to the woman's first touch are complex. Some men will respond positively, thereby continuing the sequence of signal exchange, but other men seem bewildered or puzzled. One man described a woman who had "seemed" interested in him, but when she touched him, he "knew" that "it didn't mean anything." Such men exist both in reality and in women's discourse about courtship, and they appeared so frequently in the essays we studied that we finally called them Recalcitrant Males—men who "do not get the hint," as one woman put it (Perper and Weis 1987; in the U.S. sample of essays, 30/69 = 43.5% of women described them; the frequency was much lower in the Canadian sample, 2/48 = 4.2%). Other

men will take the woman's touch to mean overt and explicit interest in sexual intercourse, and will respond in ways the woman sees as inappropriate and unpleasant, e.g., by trying to touch her hair or face, or by placing his hand on her waist or hip. If the woman has just recently met the man (e.g., at a party), she will brush his hand aside, move back quickly, or even get up and leave.

Men also initiate the first touch. Again, however, many men will touch very soon after meeting the woman (say, within the first two or three minutes, before any kind of conversational rapport has occurred). De-escalation usually follows immediately as the woman rejects the man's overture. These female reactions to male touching illustrate another important characteristic of the courtship sequence. It has a distinct temporal pattern, and, although its duration can range from 15 minutes through several hours, an event occurring out of sequence—like a man's touching her hair immediately after they have met—will cause immediate de-escalation. If the man persists, anger and sometimes fear will replace whatever interest she may have felt.

By contrast, if she touches first, or his first touch is delayed until her interest has grown, then a man's touch has very different meaning: seen as a response and reciprocation of *her* interest, it now means intimacy or even love (Perper 1985:17–18; see also Silverthorne et al. 1976). As with eye contact, touch is highly polysemic, and its precise meaning emerges not merely from the courtship context itself, but also from *when* in the sequence it occurs.

If touching occurs in the proper temporal sequence, when it is mutually reciprocated, it powerfully conveys growing and mutual *sexual* interest. It is not the sole signal that can do so; eye contact and turning also focus sexual interest. However, when a touch occurs while eye contact is increasing, and as the two are turning to face each other fully, its effect is very great. First, prior events imply ("mean") that touch is no longer merely friendly attentiveness or reassurance, say, of the kind that can occur in a non-courtship interaction. Instead, touch has become eroticized by virtue of following upon previous escalations. Second, touch serves to eroticize prior events, so that the two can now *re-interpret* their preceding conversation and mutual gazes as having *led* to touching and growing sexual interest. In brief, meanings of present *and* prior events are shifting as the two increasingly come to see each other as the center of their private perceptual and symbolic worlds.

Synchronization

As the two talk, turn, look more frequently at each other, and start to touch, still another process is beginning. This is synchronization of body movement. Synchronization develops gradually and, with different couples, at different times in the overall sequence. At first, it may involve no more than a simultaneous response to a waiter or a bartender, or a glance at some object, like fish in a fish-tank or a passing airplane. Moreover, at first, simultaneity of movement quickly breaks down as the two shift weight, reach, or look around in rhythms that are independent of each other's. But, as they start to turn, and especially after their first touch, movement rhythms synchronize more completely and thoroughly. Typically, synchronization first involves head and hand movements (e.g., both people lift their glasses, drink, and put them down synchronously). Then seemingly inadvertent torso motions are

made in synchrony (e.g., shifting weight or turning simultaneously). Finally, synchronization involves all body movements, including leg and back motions ("full synchronization").

Early synchronization often involves an alternation of movements. For example, she reaches for her glass, lifts it and drinks; as she reaches, he leans forward; then, as she drinks, he lifts his glass; then, as she replaces it on the table, he drinks. Here, synchronization is offset by only one movement pattern. A second example involves leaning. She leans forward, gazing at him while he leans back. Then she leans away while he leans forward, so that they sway back and forth in rhythm ("counter-synchronization").

As the sequence progresses, counter-synchronization usually is replaced by "mirror-synchronization," where each movement made by one partner is mirrored exactly by the other. Thus, the two will now both lean forward and back simultaneously as if a mirror were placed between them. Postures also mirror each other, so that he leans his left elbow on a table, holding a plate in his right, while she, to his left, leans on her right elbow and holds the plate with her left hand. Although postural synchronization is striking, it is less striking than mirror-image movement.

Few laypeople spontaneously notice synchronization, and it may embarrass them to find themselves in synchronization with someone else. However, synchronization is quite clear to the observer (Schefflen 1965; Morris 1977:83–85; Givens 1983:40–43; Perper 1985:78–84). Many graphic artists have also portrayed postural synchronization (Perper 1985:84).

Since few courting individuals notice synchronization, it is hard to say that it has "meanings" to them. However, it means a good deal *about* them, for full body synchronization in particular is one of the best indexes of intense and full mutual interest between two people. It corresponds to the state men and women often call "good chemistry" or "good vibes." It also appears that men and women do not synchronize as easily as do two women who are good and close friends, who may sit at a restaurant table or stand at a party and fall virtually immediately into postural and movement synchrony. Men who feel close to each other will also easily synchronize, as do long-time married couples. However, the development of synchrony between a courting man and woman occurs only after the preceding stages of the sequence have been passed successfully, and it does not begin the sequence.

Synchrony is not a deliberate or conscious imitation of the partner's movements. First, such imitations are often a trace out of synchrony, with the mimic enacting the "same" behavior a half-second or so after the partner has started it. Second, so few laypeople spontaneously recognize synchrony that it seems difficult to impute conscious motivation to it. It is therefore an excellent index for the spontaneous development of intimacy. It can also last for considerable periods of time. Indeed, when they are in full synchrony, the two are fully fascinated by each other, facing each other fully, gazing only at each other, and touching each other regularly.

EFFECTS OF THE SEQUENCE

Throughout, the sequence develops mutually, by reciprocated escalations and responses. Although women often initiate escalations proceptively, a single proceptive act cannot drive or force the male partner to respond, and male non-

responsiveness is often a cause of failure for the sequence to reach synchronization. Indeed, such non-responses will cause the sequence to break down completely. Likewise, a man cannot force a woman to respond to an unwelcome touch or to synchronize unwantingly with him.

Secondly, many components of the sequence have great meaning for the participants, which can be described by many women and some men in considerable detail. These meanings all focus on how intimacy develops, and how better to communicate either interest or reluctance. Women, in particular, are often quite explicit in describing how a man may "get the wrong idea"—that is, believe that she is more interested in him than she is—by a misreading of her nonverbal behavior, particularly her touches or her gazes. And, from many interviews with men, I concur that men often are unable to decipher women's signals, or, if they decipher them, are frequently unwilling to trust them.

Third, the sequence is simultaneously verbal and nonverbal. Ideas and feelings expressed vocally are often reinforced by changes in posture and movement pattern. Thus, she says, "That's really interesting," while simultaneously leaning forward and perhaps touching him. Or he may smile and gaze while nodding, and say "I can see what you're driving at." The phrase "double message" is clarified by recognizing that verbal and nonverbal modalities can reinforce or contradict each other. Thus, a man says "Yes, that's very interesting," while simultaneously glancing elsewhere. For most women, he has communicated lack of interest, not merely because his nonverbal behavior is inattentive, but because the conflict between his messages itself "means" uncertainty or reluctance. Women too can "send double messages" if they behave "interestedly," e.g., by touching, but de-escalate the conversation, e.g., by talking only about nonpersonal matters, such as business or school. In brief, only the *co-occurrence* of intimate verbal and nonverbal behavior truly communicates interest. One alone is not sufficient, no matter how hard the uninterested person may try to convey interest.

Fourth, the internal experience of the sequence is gradual development of intense feelings of mutuality and shared warmth. In its final stages, the two people are virtually entranced by each other, and one can suggest that a fully synchronized couple is in a sort of altered state of consciousness. Certainly, their attentiveness to external events is enormously reduced, and it is easy for the observer to use words like "trance" to describe a fully synchronized couple. For Mosher (1980), "trance" is one dimension of sexual involvement. Common English records this fact by employing words like *entrancement*, *enchantment*, *rapture* and the like for this state. Participants in courtship are hardly scientific observers of their own behavior, yet their own language conveys accurately the result of passing through the sequence: fascination, wonder, and even love.

Finally, the sequence can easily transform itself into mutually experienced sexual arousal, provided the couple can go somewhere private (if they are not already alone) and provided that external interruptions, such as leaving the party, do not intrude too greatly. In writing about seduction scenarios, at least some women explicitly attribute sexual goals, intentions, and meanings to passage through the sequence and see their own activities as leading to and causing sexual intimacy (Perper and Weis 1987). This transformation is not surprising. First, the sequence recruits an increasing range of embodied behavior patterns, like eye contact, touch,

and synchronization. Second, it is mutually achieved, so that the woman's concerns about the man's interest are reduced. She has *seen* him respond to her.

Functionally, then, for the woman, the sequence *as a whole* comes to mean mutual and shared interest, or even love. It can become a *symbol* of mutual interest shared by the man and her. This conclusion is best illustrated when a man does not respond (that is, he is a Recalcitrant Male). Then, the woman may readily say that his non-response "means" lack of interest in her as a person and as a woman, instead, for example, of "meaning" that he has "other things on his mind," such as financial setbacks or problems at school. It does not matter if the woman's interpretation is correct or not; what matters is how the sequence, and the man's responsiveness, becomes a symbol for *his emotional involvement with her*.

And, for many women, mutual emotional involvement is a necessary prerequisite for sexual involvement. To be sure, the sexual revolution in North America has greatly increased premarital sexual intercourse among women (Perper 1985:112–125), but, historically, intercourse between an engaged man and woman has always been fairly frequent in North America (and Great Britain, Perper 1985:121–122). We can suggest historically that if the man publicly signalled his interest through a formal engagement, then his emotional and personal involvement with her was seen as sufficient to reduce the woman's sexual reluctance with him. If so, then passage through the courtship sequence is itself a strong impetus to intercourse, for it "means" that he loves her and is not merely engaged to her for reasons of convenience. This conclusion is even stronger today, when formal engagements and marriages of convenience or policy are less frequent, and are replaced by premarital dating and sexual activity. In those cases, the sequence not only "means" mutual interest, but may virtually ensure that the two have intercourse. In this, the sequence is the behavioral and symbolic precursor to coital intimacy, and therefore elicits it. It is courtship in the sense I defined above.

BIOLOGICAL THEORIES OF MATE SELECTION

Given that women proceptively initiate and escalate the courtship sequence, it is empirically clear that they are making an active choice to establish the preconditions for intercourse. (Perper and Weis [1987] discuss extensively the widespread belief that women are typically or usually sexually reluctant, coy, or hesitant; the belief is not a fair assessment, even though women can be reluctant with some men.) What characteristics is the woman choosing, and what have these choices to do with theories of sexual selection?

At first, during the initial approach, she explicitly chooses a man on the basis of his looks, manner, voice, and appearance. Thus, one woman is attracted to well-built stocky men with beards; another woman is attracted to tall, muscular, and clean-shaven men. However, if such a man does not respond to her proceptive escalations, I have *never* seen a woman remain with him. Initial appearances may lead to initial interest, but if interest is not maintained and built—which is the role of the courtship sequence—then, no matter how attractive a man looks, courtship will quickly de-escalate. In essence, in the ethnographic milieu I am describing, the

woman chooses a man who responds to her specifically and intimately, as best as she can judge that from his behavior during the courtship sequence. Thus, her choice is made "on-line," so to speak, by assessing his behavior, particularly his capacity to respond personally to *her*.

This conclusion has a powerful implication. If she feels that she wants a husband with characteristics X, Y, and Z—say, certain looks, a certain degree of wealth and status, and certain interests in hobbies and leisure time activities—and she therefore searches out a population of such men, her success *still* depends on his being able successfully to pass through the courtship sequence. It only sounds plausible that she might "settle" for a man who cannot do so. However, by definition, if he does not pass through the sequence with her, it is because *he is not interested in her*, and will therefore be most unlikely to marry or live with her. He may have a casual sexual encounter with her, but beyond that, his own lack of interest will forestall any plans she may have for a long-term mateship.

Ethnographically, this fact embitters many women, but, even so, it reinforces greatly the conclusion that, willy-nilly, her choice of man is restricted to choosing among men who reciprocate her interest behaviorally. If they do not, then no amount of proceptivity will ensure a mating, let alone marriage. Hence, her desire for a man with characteristics X, Y, and Z is muted or modulated by the possibility that no such man is interested in *her*. She cannot force him to marry her, and even if she becomes pregnant, the easy availability of abortion has made it unlikely that he will marry her solely for that reason (provided that she even *wants* to be pregnant).

From a purely strategic viewpoint, on the one hand her best choice is to place a man's ability to respond to her behaviorally, sexually, and emotionally above and before any list of traits she may want in a husband, such as wealth, status, or interest in certain hobbies. If, consciously or not, she makes this strategy decision, the man she chooses will be actively interested in her, while the other man is always at risk for leaving her for someone else. On the other hand, this decision—which is often called "marrying for love"—may not obtain for her the socially or economically optimal mate, e.g., a man who can support her financially if she so wishes. (A mainstay of modern romance fiction for women is to meet a man who is *both*, rather like Darcy in *Pride and Prejudice*. [Austen 1813/1945; see Thurston 1987])

Accordingly, her choice is an active tension between the man who responds to her in the courtship sequence and the man who offers other advantages, which, like wealth, are very often the opposite of responsiveness to her. (A wealthy man on his way up is not likely to spend an unplanned and spontaneous week with her in the Caribbean when he works 80–90 hours a week. Or, if he does, his telephone may be a more constant companion than she is. Wealthy, high-status men, especially if young, are more likely to be workaholics than romantics. See Farrell [1986] for a thorough discussion.)

Yet, the tension between these strategies depends, in part, on her own economic and social position. If she is very wealthy, or of "low" status and unable to marry up (as has been true of many women in the past), then she can choose a man romantically for his behavioral capacities (e.g., in the courtship sequence or as a hard-working and devoted husband and father). In contrast, if she can marry up, then the tension increases, for his involvement with her may seem to promise easy access to his wealth and status (what Farrell [1986:60, 92–99] called "flash-dancing" her way to success, after the movie *Flashdance*). To the degree that she values or

wants his wealth or status, then her choices become entailed, and can no longer be made solely according to how he responds emotionally or behaviorally. By contrast, if a woman whose peers are marrying up chooses a man solely for his behavioral and emotional responsiveness, she may be called “unconventional” and be treated with suspicion or even condescension by her woman friends (e.g., he is an artist or is otherwise socially and economically marginal, or he is younger or much shorter than she). No matter which choice she makes, there are social and/or personal pressures on her to have made the *other* choice.

We have, then, evidence for a behaviorally very powerful process, the courtship sequence, which generates virtually trance-like fascination both emotionally and sexually, as well as evidence that some women must sometimes yield—or feel that they must—to social and financial pressures to marry up. The risk of the first is potential financial difficulty or even ostracism from her social network; the risk of the second is that he may lack any genuine involvement with her and may abandon her *de facto*, through an affair, or through divorce. Neither risk can be taken lightly.

However, another question may now be asked. Is there a sense in which one choice is more basic—more universally “human,” if you like—than the other? Are both choices equally species-specific forms of courtship, or is one a later cultural modification of the other? For example, is susceptibility to the courtship sequence a recent epiphenomenon (due, perhaps, to the greater sexual freedom contraception has offered women, or to a modern/romantic ideology of “true love”) built on a more basic female calculus of seeking males with wealth, status, power, and resources? If so, is seeking such males the basic form of female choice in humans? Or, on the other hand, is female (and male) susceptibility to the sequence the more basic pattern, one that ensures deep bonding in the face of environmental and/or economic fluctuations, and which has yielded to a calculus of middle-class ambition only in recent years?

Sexual selection theories offer one answer to these questions. However, the answer seems misleading. So, I will turn next to evolutionary theories of sexual selection and mate choice, and try to explain why I believe they are perhaps good first starts, but otherwise miss the mark widely.

Theoretical Objectivity and Cultural Subjectivity

Few would doubt, I suppose, that the major value of biological thought as applied to human behavior is theoretical. None would argue that human behavior, as behavior, is identical to that of any other animal. So, in the present context, we must draw centrally from evolutionary theories about sexual selection, rather than merely making comparisons between the ethology of courtship in humans and non-humans. Yet, in doing so, we encounter some curious paradoxes and problems that can blockade the application of these theories to our understanding of the human courtship sequence.

Sexual selection theory has a long and complex history in biology (aspects of the history are reviewed below). Originally, it was created to solve certain kinds of problems, particularly the evolution of characteristics which, like the peacock’s tail, seem useless or even maladaptive. Therefore they seem to have no obvious origin in

natural selection. Ever alert to possible exceptions to his ideas, Darwin saw the great significance of such characteristics for any theory seeking to explain organic diversity through an essentially rational calculus of survival. After Darwin, the theory took many twists and turns, attracting to itself a variety of questions not all of which were related to his original conceptions. The result has been a complex technical literature, often obscure to the nonexpert.

For the student of human sexual behavior the only question is how to use these theories. Obviously, they will need modification in details (naked human males do not have fancy decorative feathered tails), but we expect that the theoretical principles adduced from as wide a range of species as biologists study should at least be partly relevant to human mate selection. This, then, is the first difficulty of using those theories: judgement and care are needed for seeing precisely what details do and do not apply to *Homo sapiens*.

However, a second problem remains. Writing of physicists' interpretations of time at different periods in history, Richard Morris wrote:

Over the centuries, there has been a continual interaction of philosophical outlooks, social trends, and scientific ideas about time. Consequently, our understanding of modern views on time will be enhanced if we can see how and why these interactions took place. [Morris 1985:9]

It is an elegantly worded caveat. Ideas about sexual selection are also the product of interactions between philosophies, social events, cultural presuppositions, and scientific data. Scientists do not deliberately attempt to build theories that mimic the social preoccupations of the day, nor do they see themselves as merely explicating a philosophical *Zeitgeist* when they theorize about natural phenomena. Instead, as Morris later remarks, "Unconscious assumptions are part of the thought of every age" (1985:69). And it is as true of biology as it is of physics that unconsciously made assumptions underlie how data are interpreted and how theories are built.

In a real sense, classical biologists made every attempt to avoid identifying the organism under study with human beings. Such identifications are called "anthropomorphic," and are frowned on seriously. By rejecting anthropomorphism, biology took a giant step towards scientific objectivity. Yet, the luxury of laying claim to objectivity can produce not only exquisitely refined theory and method but also confusion. By telling oneself that one is objective—and then believing it—one can deny that unconsciously held presumptions do exist and do color one's theorizing. The seductiveness of thinking oneself objective is particularly noxious when one's unconscious presumptions reflect or represent opinions and beliefs that are widely held in the culture of the scientist. During the heyday of eugenics, around the turn of the century, few scientists would have doubted the cultural opinion that some "races" of humankind were simply and obviously inferior. No one (except a few radicals) questioned such ideas.

I am not asserting that sexual selection theories are racist. However, I will suggest that they contain currently equally undoubted presumptions about the role of men and women in life, and particularly, about the role of women in reproduction and sex. These presumptions remain embedded in theory, I suspect, because biology as a discipline does not have a history of theoretical self-examination (it lacks meta-theory of the kind so widespread in the social sciences) outside of the purely technical domains of testing theories scientifically. Few biologists are happy if they hear that a favored theory has implications for or about human behavior. Nor are

they happy to hear that such theories might have origins in the *Zeitgeist* as much as they have in the data. Yet, as I have argued elsewhere, much scientific theory, especially in its formative periods, contains many ideas and beliefs that arise from the unquestioned notions of “how things are” both naturally and socially (Perper and Schrire 1977; Perper 1985:34–44).

Such “sociology of knowledge” considerations may seem academic or of interest only to historians or philosophers, rather than having major significance for the biologist’s endeavor itself. However, a paradox emerges if we adopt this optimistic (and, I suggest, naive) viewpoint. How is one to apply such a theory to human behavior itself? If the biologist draws on his (the pronoun is much more likely to apply than *her*) preconceptions of what women are like when he builds a theory of sexual selection and female choice, when we apply that theory not to animal behavior, but to human sexuality, shall we not merely rediscover the biologist’s original preconceptions? And, if we do rediscover those preconceptions, may we not then say that the biologist employed them when building the theory in the first place?

Thus, the problem with such theories is that they become circular when they are applied to human behavior. Person A looks around him and draws personal conclusions about women and sexuality. He then builds those conclusions into what seems to be biological theory. Then, Person B—me, for example—takes that theory, and compares human behavior to its predictions. And, lo and behold, I rediscover what Person A first thought about women and sex. Now, if I *share* those opinions and beliefs with Person A, it is very likely that I will now claim that our opinions have received biological validation—that is, that he and I were right all along about what we thought about women and sex.

One can doubt if this process is science. In fact, we have discovered nothing new, nor have we reformulated our questions in genuinely explanatory ways. We have only restated the problem, now under the guise of a biological language. (The problem is much worse when men typically know so little about women’s proceptive behavior and meanings. [Perper 1985:175–211])

I will next turn to some selected examples of sexual selection theory and, after that, attempt to show how cultural and personal preconceptions about women and sex have been built into the theory. For the biological reader, I should add what follows will not easily be recognizable as “biology.” I interweave cultural and social interpretations in the presentation, and they will seem extraneous to a biologist. Yet, I insist that the study of human sexuality, including sexual selection, is an interdisciplinary effort. If we biologists ignore social scientific data and, especially, metatheoretical insights gained by the social sciences, we risk reinventing various square, oblong, or lumpy wheels. In brief, when biologists become interested in human behavior, they cannot ignore what has been done by others, including social scientists.

Examples of Recent Theorizing

Much of recent theorizing seems designed to answer Freud’s famous question: What do women want? Do they want providers, males who supply good genes together with their parental investment? In cultural terms, the question is more

familiar: what kind of a man should a young woman marry? I want next to examine a recent essay by T. R. Halliday (1983), a British animal behaviorist, and then re-examine aspects of Trivers' (1972) work.

Halliday (1983). Halliday's essay has the opening place of honor in Patrick Bateson's (1983a) edited collection of papers on sexual selection. Bateson says that the essay "reviews the major issues that recur throughout the book" (Bateson, 1983b:ix-x), a statement true, I suggest, not only of its technical content but also of the cultural material that enters much modern sexual selection theorizing. Halliday's essay starts with the following paragraph:

There are compelling reasons for believing that animals should not mate indiscriminately, but should choose their mates. Since individuals vary in their quality as potential mates, we would expect natural selection to have favoured mechanisms that ensure that mating occurs with partners of the highest possible quality. The word "quality" is used here to cover a wide variety of properties of individual animals, including resources that they actually or potentially hold, their abilities as parents, and their genotype. [Halliday 1983:3]

If we wish to use this passage for understanding human mate selection, obviously we must replace the word "animals" with "men" or with "women." Then, if Halliday's ideas are valid, we shall see the "biological" bases of human mate selection, and, in specific, an answer to what women are choosing when they enact the courtship sequence with one man and not another, and finally have potentially fertile sexual intercourse with that chosen man. We shall also see how men choose women. Since the paraphrase is important in what follows, I give it here:

There are compelling reasons for believing that men should not marry indiscriminately, but should choose their mates. Since women vary in their quality as potential wives, we would expect natural selection to have favoured mechanisms that ensure that marriage occurs with partners of the highest quality. The word "quality" here is used to cover a wide variety of properties of individual women, including resources that they actually or potentially hold, their abilities as mothers, and their breeding and race.

However, when we make this replacement, another fact arises: Halliday's text stands not only as biological theorizing but as *discourse*. It is about people and how they behave. Let us consider that aspect of Halliday's passage, having made the substitution of "men" for "animals." The result is a prescription for a certain *kind* of marriage which, aristocratically, seeks a woman of the "highest possible quality," as measured by her real or potential resources, her ability as a mother, and her race, breeding, or genotype.

We see a similar prescription when the word "woman" is substituted, now however with the added caution that a woman of "high quality" would not mate "indiscriminately." Indeed, Halliday's passage implies that she *should* not, implying that we are in a moral domain of what "should" and "should not" be done. Such domains, of course, belong precisely to *culture*, with the complex social and historical rules for who can and should marry or have sexual intercourse with whom.²

Accordingly, Halliday's passage answers the question posed before of what a woman "should" do when she must choose between a man with whom the courtship sequence leads to intense intimacy and another man who has the high "qualities" Halliday recommends in a potential husband for her. She *should* choose the second man, provided that the first one does not have the other's wealth or

status ("resources") or his overall "quality." We are thus left without an explanation for why women *do* sometimes choose the first man.

Nor does Halliday's passage explain what the woman "should" or *would* do if marital access to such high "quality" men is closed by class, race, or ethnic barriers. Should she therefore refuse to mate with the available, but "low" quality men of her own class, race, or ethnic group? Or should she make every possible effort to transcend those barriers, thereby dooming the men of her own group to celibacy or to whatever "low" quality women remain to them? Or should she stay in her own group, trying to select the best of a bad lot, and make do with him?

At the very least, Halliday's passage refers only to women who have access to a pool of "high" quality men and who can therefore choose the best among them. Other women, less blessed than she, presumably are left in limbo—for Halliday's theory says nothing of them, nor explains what kinds of mate choice they and their men might make. In brief, Halliday's paper does not provide a theory of mate selection at all, but merely a prescription of what females *should* do.

Furthermore, his prescription echoes well-known social ideals for marriage. Thus, A. Graham Ikin (Smith and Ikin 1956), a British lecturer and writer on sex and morals, said:

The love that binds men and women together also binds the generations, and on its *quality* the future of civilization and the culture of the world depends. [emphasis original; 1956:77]

Later, Ikin adds

The good mother will want to choose the father of her children wisely, and the man who wants healthy children and a happy home life must choose his wife wisely.

So many mistakes are made here that prevent marriages being happy ones. The flashiest man taking a girl out to shows and dances may not have the steadiness of character necessary for sharing *happily* the ups and downs of life. Nor does the girl who "puts every penny she earns on her back" often make a good life partner. [The phrase refers to clothes, not sex.] Her satisfaction comes in display and not in comradeship. . . . It is important, too, not to have the same kinds of faults. For example, if two untidy people marry, they will always tend to blame each other for the general untidiness, and peace will fly out the window. [emphasis original; 1956:83]

The example illustrates a widespread parallelism between the sexual morality and selection literatures. Each emphasizes the value of choosing a "quality" mate and of eschewing mere sexual attraction, especially by women.³

Of the possibility that women might marry men merely because they like them or, as Halliday puts it, "simply because they find those males more attractive," Halliday says only that "such apparently arbitrary, even whimsical, behaviour is in sharp contrast to the intensely utilitarian emphasis of the theory of natural selection" (1983:11). I do not agree that the utilitarianism arises from the theory of natural selection. Instead, I suggest that it arises from a confusion between the principles of biology and the utilitarian preconceptions about marriage and mating that are held by some members of the English-speaking tradition.

In brief, Halliday's theory can treat the events of the courtship sequence, for example, only as whimsical or arbitrary. If so, then virtually by definition such theory is useless for explaining either the sequence or how it affects men's and women's mate choices. Furthermore, this "sexual selection" perspective also simplifies women's sexual behavior drastically:

In a majority of animals, males adopt the more active role in courtship and have a repertoire of ritualised, often very conspicuous displays. This makes the collection of data on male behaviour a relatively simple matter, and variations in male sexual responsiveness can usually be easily detected and quantified. [He is discussing the so-called "vigor" of male sexual behavior, not "response" as I used it earlier.] By contrast, female courtship behaviour is often not in the form of stereotyped displays, but simply involves the adoption or nonadoption of receptive postures or movements. [Halliday 1983:19]

He seems to have in mind the sort of display of male peacocks rather than the proceptive behavior of female mammals (Beach 1976; Krieger, Orr, and Perper 1976). Nonetheless, as a generalization, the passage is false, particularly in humans. Yet it corresponds to the widely held view that women are sexually inert, passionless, and passive, a view that is again false (Cott 1978; Vance 1984).

In Halliday's view, as well as much more of the sexual selection literature (space limitations prohibit its analysis), female choice boils down to a woman being sexually receptive to a man of sufficiently high quality and resources, and rejecting other, "lower" quality males. Thus, when Halliday speaks of "whimsical" female behavior, his word *de facto* makes it clear that this version of sexual selection theory cannot deal with any form of mate choice other than that based on utilitarian scheming. The theory does not explain what women without such choices might do, nor does it explain, except as whimsical arbitrariness, why women find some men and not others emotionally and sexually attractive. Nor does it explain how a woman might sustain very high costs if by choosing the "high quality" male she simultaneously selects an alcoholic, a philanderer, or a cold-blooded egotist. No effort is made in the theory to discuss costs of selecting up. Lastly, because it misrepresents women's roles in courtship, notably women's proceptivity, the theory cannot explain female behavior except as passive receptivity to the efforts of certain males to copulate.

As with many theories like Halliday's—and his version of sexual selection is not atypical of modern thinking—a cultural calculus enters the theory as preconceptions about the proprieties of sexuality and upwardly-mobile marriage, makes a circuitous route through biology, and re-emerges still bewildered by why and how women (and men) might make decisions based on something other than utilitarianism. As an ethnographic theory of human mate selection, even within the narrow confines of one culture (our own), Halliday's theory is of extremely limited value.

O'Donald (1983). I will turn briefly next to a model of courtship presented by Peter O'Donald (1983). It too reveals some striking limitations in how women's courtship behavior is interpreted. O'Donald writes:

Female choice may thus operate in two different ways. Imagine a woman buying a hairdryer. How does she choose between different makes and models? She may have no prior preference in favour of a particular model. Her choice may depend solely on the pressure of the salesmanship she has been subjected to: she chooses between the salesman [sic]. Or she may already have decided what model she wants. Salespressure may have no effect on her choice. Or both prior preference and salesmanship may influence her choice. In a similar manner, a male bird may succeed in mating by his greater ability to court the females. [1983:53]

While the serious student of human sexual behavior may smile at this obviously oversimplified model, the passage does represent O'Donald's ideas reasonably well. Later, he writes that "female choice may take place by two mechanisms: some males may court females more actively or persistently than others; some females may prefer to mate with particular male phenotypes" (1983:65). Each version

translates into the other quite well, so we may assume that O'Donald's metaphor is not a deliberate oversimplification. This interpretation of female choice can be called the "sales-and-advertising" model. In it, active male courtship is equivalent to male salesmanship; prior female preference for a male is equivalent to her having made a prior purchase decision.

There are several problems with using this model for understanding human courtship, if, indeed, it is a genuinely biological model at all. First, it does no good to say that courtship is "like" something else human beings do. The analogy merely reminds us that in a consumer-oriented society like ours, people make many choices about many things, which hardly explains how or why they make those choices, or if a choice made in one context (courtship) is genuinely or truly similar to choices made in another (purchasing hairdryers). Metaphor is not explanation.

Nonetheless, as metaphor, the sales-and-advertising model is important for its underlying presumptions and preconceptions. Women are described as consumers, not producers, of goods. The woman of the metaphor is not a working-class woman, nor a South American peasant woman, nor a woman living on a homestead in 1870. Instead, she is a modern, middle class North American or British woman, a *type*, not a person. Next, men are portrayed as mere passive objects among whom women pick and choose, rummaging among them, so to speak. Here, we have an echo of older concerns in sexual selection theory that female power over men is very great, for it includes the power to determine if a man reproduces. The woman of this metaphor buys the man, whether she acquiesces to sales pressure or has made her own choice, and thereby obtains the privilege of using him, like a hairdryer, for her own *utilitarian* purposes. However, since women of the "type" O'Donald's passage evokes do not typically fall in love with their hairdryers, the model has essentially no value for explaining what happens when a woman *does* love a man.

The sales-and-advertising model has several other curious properties. In quantitative models of the "female-rummages-through-males" kind, it is usually assumed that males differ in "quality" (that is, in some aspect of their fitness) and that the female chooses among them according to some selection regime (e.g., Wittenberger 1983; Janetos 1980). Wittenberger and Janetos both concluded that the female maximizes her mate's fitness (or quality) if she samples all the males, and then selects the best, a hardly surprising conclusion, since the procedure would select the best of anything. Less effective ways for females to maximize their chosen mate's fitness or quality are to accept any male above a quality threshold, or to compare only a subset of all sampled males. However, no matter which regime she might use, the presumption is that once she has encountered the highest quality male, she will mate with him.

Yet it is completely unclear how a female might "sample" a male's fitness or quality, if an important part of his fitness is his ability to provide for her offspring with him. Does she have "test children" with these men? Obviously not, since that is what she is testing for in the first place: in this model, she wants a child only with the "best" man. So, she must employ indirect criteria for assessing his "quality," and she must hope that those criteria predict his quality or correlate with it. But, since she cannot actually test or sample men's quality, her choice is beset with uncertainties, and has become stochastic: two sources of noise make her selection less than optimal. The first source is that she may misjudge the indirect signals of

his quality, an error in her reading, so to speak. The second is that even if she reads the signals quite correctly, the signal may not correlate perfectly with his "actual" quality. He only looks good, in other words. And, within the logic of this model, if her expected error due to such sources of noise is equal to or greater than the variance in male's actual fitness, she gains nothing by choosing one male over another. Thus, what began as a model of female choice according to seemingly purely rational and utilitarian considerations becomes, on scrutiny, a model for why she might not have to choose at all. The possibility of making a mistake may be greater than any expected gain in bothering to choose at all. In essence, the model is not quite what it seems.

A possible reason for this problem is that the sales-and-advertising rummage model is not actually a model of female choice at all, but of male quality and attractiveness, at least as those things are sometimes seen by men. The model says that males differ in quality, and that once a female has found the best male, she will stick to him. He is like a magnet, one supposes: the man whom no woman can refuse. I speculate that this model may be prevalent partly because the phenomenon it describes corresponds to the experience of many men when they were adolescents and young adults: he sees an attractive woman and knows that she is not "interested" in him, but, instead, in older boys or other men with more money, fancier cars, better clothes, and so on. So, building from this (very real) experience, he believes that some men "have it," where "it" refers to whatever attracts women, and that women automatically and naturally pick such men. Thus, the model hierarchalizes men, with one man on top, and the rest losers or second-bests. And, in the folklore of being male in North America, no woman would choose one of *them*. (A reader who doubts this analysis of male experience of women and their choices is directed to Farrell 1986.)

Yet, I doubt if many North American women share this view of male attractiveness. If women's culture is organized less hierarchically than men's, then a woman may see as attractive a man whom other men downgrade in some kind of linear ranking from best to worst. By contrast, she may balance his characteristics in far more complex ways, and have no *single* ranking for him. If so, a male model of what constitutes male attractiveness may not correspond to what *women* see as male attractiveness.

However, perhaps even more tragically, the model misses a crucial part of women's experience. They too experience themselves as unattractive compared to other women. The slightly overweight adolescent girl who has had three dates in her life does *not* see herself as being able to choose among men, let alone choose the "best," no matter how he may be defined. Ethnographically, these "rummage-through-men" models simply do not correspond to women's experiences—and, if they do not, then, *by definition*, they cannot be models of the choices that women make. Instead, they are models of how men perceive women, and represent ways for men to "speak about" women in biological and evolutionary metaphor.

Triversian Models of Sexual Selection

Without doubt, Trivers' 1972 essay is the most important modern work in sexual selection theory. The concept of "parental investment" has become a standard

theoretical tool for studying male and female reproductive strategies, so much so that it is probably best to speak of Triversian models rather than of Trivers' model. As valuable as these models are, nonetheless I will question their direct applicability to understanding men and women's mate choices. With modification, some minor and one major, they are valuable. Since my argument depends on some subtleties of "parental investment," I will comment on the theory before using it.

Broadly, Triversian models use economic concepts such as investment and cost to compare male and female reproductive expenditures, and then to suggest how evolution may have produced strategies which optimize investment and cost/benefit ratios. I have no objection to economic models *per se*, as long as we understand that "... abstract [economic] models of markets and human interaction do not explain the reality of human beings in an actual marketplace. They are correct as models and offer the observer a core understanding of the processes involved" (Thomas Ireland, an economist, in personal communication to the author, February 11, 1986). In brief, they are useful idealizations.

Even so, economic models of biological phenomena can mislead the student of human behavior. Human beings engage in "real" economic behavior that involves money, investments, and financial transactions (e.g., a husband who supports his wife financially has a specific *economic* relationship with her), so that an effort must be made to keep distinct the operation of real economic principles (e.g., in examining family finances and the economic division of labor) and the operation of biological principles that are *modelled* as economic (e.g., their sexual relationships, seen in the terms of the Triversian economic model).

Fortunately, biology itself provides a language for keeping the distinction clear without losing the value of economic modelling. In biology, we can speak of "energy metabolism," and use the chemical/physical concept of energy to provide ways of understanding what the economic models of sexual behavior mean biologically. Physiologically, energy is measurable in kilocalories (abbreviated Cal) taken in from food and expended in the organism's life activities (energy here is not a metaphor for vivaciousness or vitality). It turns out that economics provides useful ways for understanding aspects of how organisms allocate energy between various necessary tasks, such as hunting, foraging, sleeping, and sexual activities. In the following, I will use both economic and energy formulations for discussing Triversian models.

Originally, however, Trivers' key concept—parental investment or PI—was characterized in economic terms. In essence, PI was defined by assuming that the reproducing individual possesses a certain fixed endowment of energy for producing and raising offspring. It can allocate or budget only so many kilocalories for doing so, since it has other needs (e.g., food) as well. Then, arguing essentially from rational economics, Trivers proposed that each offspring produced *reduces* the endowment, and so lessens the endowment for producing further offspring. This reduction he called "parental investment," although the term is somewhat misleading if one confuses it with an investment made in stocks or bonds, from which one expects or desires a profit. It would be more correct to say that the parent "spends" the endowment, although I suggest below that sometimes the term "investment" can apply. Using his assumption of a fixed endowment, Trivers next noted that males and females typically differ in how much their endowment is reduced by having a single offspring. Because females produce large gametes, and, in mam-

imals, have extensive periods of bearing the unborn young and of post-natal lactation, he reasoned that females typically "invest" (better, spend) more of their endowment in an offspring than do males, who produce small gametes and typically do not bear or suckle young.

Finally, arguing still on rational economic grounds, Trivers suggested that when we compare males and females, we should see that females spend ("invest") their endowment more cautiously than males, since each investment reduces their total endowment more than it would for a male. Given that sexual reproduction requires both a male and a female, he concluded that females should carefully select the male who fathers their offspring, because, if her choice was poor (compared to choosing some other male), then she has sustained a loss on her investment, again compared to having chosen the other male. By contrast, males, who spend much less per offspring than females, should be less cautious than females, since they lose less of their investment if they make a mistake and choose a poor "quality" female. The consequence is that females are expected to be choosy about males, while males should be less choosy when selecting females. They do not bear the costs females do.

Instead of seeing female choice as whimsy, Trivers' biological-economic model suggests that female behavior is underlain by a calculus as rational as that underlying natural selection, and as amenable to rational discussion as any other part of evolutionary theory. No criticism can minimize that contribution.

However, the model deserves careful scrutiny if one wishes to apply it to *human* courtship. Three modifications emerge from such scrutiny, two being relatively minor shifts in the assumptions of the model, and the third being a much deeper challenge to the model. I shall now sketch these modifications, in order to point out how future research might proceed.

First, consider the premise that male reproductive expenditures are much less than females' expenditures. Human males have very great parental investment in their offspring because cultural-economic relations between men and women often require that the man contribute heavily and perhaps solely to the women's and children's support. "He is working for his family," as it is sometimes said. Using Trivers' own argument, we can quickly conclude that men should be very choosy when it comes to marriage, since for him marriage means committing both biological resources (as metabolic energy needed for working) and financial resources (as part of his salary) to her and her children. In Trivers' terms, a man can perhaps be less choosy in a casual sexual liaison, but he must exercise great care when undertaking marriage.

There is considerable ethnographic evidence for the idea that men become choosy when marriage is in the offing. Since Farrell (1986) describes male reactions to marriage in valuable detail, I will add only that male reluctance to marry is of great concern to women. Often, women speak of it as an inability to "commit himself to the relationship," which characteristically means that he is unwilling to marry her or to make any large financial investment in their future together. Or women will speak of men who are too "immature" to commit themselves (the "Peter Pan Syndrome," after the book). Yet, from either a Triversian or Farrellian viewpoint, such male reluctance to marry too hastily makes as much "rational" sense as does a woman's hesitation to become sexually involved too quickly with a

man she does not know. In a monogamous society in which males earn a living for themselves and their families, men have reproductive costs women do not.

The second modification occurs if children contribute to their parents' well-being. If they do, as occurs in many human societies, there is a feedback loop between "spending" one's biological and economic endowment on reproduction and gaining it back, a feature absent from Trivers' original model. Children who care for other children, perform household chores while their parents are still in their reproductive years, or make financial contributions to a growing family, alter the rate of decrease of their parents' endowments. In specific, added children make it less expensive to have more children, at least under some circumstances. (Children who support their parents after their reproductive years have finished, that is, in "old age", do not alter their parents' rate of loss of their reproductive endowments.) I will leave to others the task of showing how this feedback loop—which may represent genuine "investment" in its economic sense—may work in different ethnographic and historical circumstances.

The preceding two points merely modify Trivers' original argument, making it somewhat more directly applicable to human reproduction. Yet it is possible to question the Triversian approach at a deeper level. Does the female's "greater" parental investment actually imply that she will be sexually more choosy than males? I am now less concerned with marriage and child-raising than I am with asking if Triversian models can explain women's and men's behavior during courtship. The following analysis challenges the usual Triversian explanation for allegedly greater female *sexual* choosiness. The idea depends on considering different kinds of costs of sexual behavior. A preliminary economic analogy may make the biological energy considerations clearer.

Imagine a purchaser of goods essential for life, such as a loaf of bread (the argument requires this assumption). Imagine also that this purchaser has only a fixed amount of cash available (e.g., only so much money in the paycheck or bank). The analogy is, first, between obtaining essential goods, like food, and reproduction as essential for genetic continuity, and, second, between having a fixed biological Triversian endowment for having children and having only a fixed amount of cash available for food. Next, imagine that you and I have nearly identical paychecks or bank balances. (I am *not* assuming that one of us is male and the other female.) The analogy to the Triversian situation now comes to this. Assume that you and I have *different average costs* in what we pay for the loaf of bread and other essentials. In the Triversian argument, it now follows that if the price you pay for a loaf of bread is higher than what I pay, then you should be more wary, or less profligate, than I in how you spend your money, because you sustain a greater reduction in your available resources than I do every time you make a purchase.

However, we actually have two differentials here. The first is the differential between what you pay on average for the loaf of bread and what I pay on average. In Triversian arguments, this differential is equivalent to the male-female differential in reproductive "costs:" they are higher for one person than the other. The second differential is not explicitly mentioned in the Triversian argument. It concerns not a comparison between you and me, but holds only for each of us individually: it is the difference between what I pay with one grocer and another. Thus, on average, I pay \$2 for a loaf of bread, whereas on average you pay \$3. This is the first differential

above. The second differential is between what I pay at one grocer (\$1.90, say) and at another (\$2.10). Likewise, you have a second differential as well, if one grocer charges you \$2.90 and another \$3.10.

Now, let us compare our choosiness. For me, the only real difference is between what I pay, that is, between \$1.90 and \$2.10. Likewise, for you, the only important difference is between \$2.90 and \$3.10. When I decide where to buy bread, it is irrelevant to me what you pay for bread, and, likewise, my decision is irrelevant to you. By being choosy, I can save 20¢, just as you can save 20¢. The fact that our savings are the same has important implications. The first is paradoxical, at least with respect to the usual Triversian argument. The 20¢ difference is $.20/2.00 = 10\%$ of my average cost, but, for you, is $.20/3.00 = 6.7\%$ of your average cost. To me, the cost of choosing the more expensive grocer is higher (10%) than the cost to you of choosing that grocer (6.7%). If the 10% is important to either of us, it is more important to me, since we have identical total incomes. Put differently, if I am choosier than you in selecting where I spend money on essential goods, then I stand to save more than you do: 10% as opposed to 6.7%.

Furthermore, if our average costs are very different—you spend \$10 on bread while I spend \$1.00—the percent savings produced by being choosy is even greater for me ($.20/1.00 = 20\%$) than for you ($.20/10.00 = 2\%$). Thus, the higher your average cost, the *less* significant, percentagewise, is your savings by being choosy.

The result is paradoxical because it is the opposite of the usual Triversian argument that the person whose expenditure is higher will be the choosier. Since Trivers implicitly defined “investment” as the equivalent of price paid (i.e., it is the total amount spent, and it reduces the fixed endowment by that amount), the preceding analogy suggests that percentagewise the person who pays *less* saves *more* if he is the choosier. And I say “he” because, in this analogy, the person who pays less for reproduction is allegedly the male, not the female.

To explain this paradox in biological terms, I will switch to discussing energy allocations. The point is that all organisms must allocate energy intakes into different metabolic channels (outputs) and that there are reasonably optimal ways to make such allocations. Some energy must go to life maintenance, e.g., tissue building and obtaining food, but energy must also be allocated for reproduction, e.g., gamete development, mate searches, and actually bearing the young. In these energy terms, if the female expends an average of X kilocalories (Cal) on producing one offspring (where X includes all her costs: mate search, uterine nutritional losses to her, lactation, post-natal care and so on), it may make little percent difference to her if, with one male her cost is $X - 1$ Cal, while, with another, it is $X + 1$ Cal. The difference, 2 Cal, may be very small compared to the average, which is X . But, for a male who spends much less— y Cal, for example—the difference between $y + 1$ Cal with one female (who resists his overtures, say) and $y - 1$ Cal with another (who does not) is $2/y$, and is percentagewise greater than the female’s own $2/X$.

Thus, it seems that males actually ought to be “choosier” in some sense or senses than females. In a preliminary way, we can speak of “male choice” if and when males make such energy-reducing choices. The possibility of male choice arises because the female’s cost of reproduction (X , in other words) is simply not relevant to how *he* must allocate his own energy resources. Likewise, the male’s cost is simply not relevant to the female, since *she* must expend and then replace an average of X Cal no matter whom she mates with, and no matter how males calculate *their*

energy costs. Accordingly, the proper comparison for assessing male-female differences in "choosiness" is not the difference in their average costs of reproduction ($X - y$), but the comparison, within each sex, of what each saves by being choosy. What counts is $X + 1$ versus $X - 1$ for females, and $y + 1$ versus $y - 1$ for males.

The argument can be restated by asking what each sex gains by being choosy. Females must spend an average of X Cal per offspring, and males must spend an average of y Cal. No amount of choosiness of one's mate will alter the $X - y$ differential, since it is built into the reproductive biology of organisms in which, like mammals and some others, females produce not only large gametes but also spend considerable energy rearing the young. By being choosy, a female cannot alter the average X ; all she can do by being choosy is reduce a *part* of that cost, the 2 Cal of the example above. And, the argument above indicates that as a percent of reproductive cost, X or y , males gain more percentagewise than females by being choosy.

Working within the purely Triversian tradition and its limitations, one can now develop formal criteria for showing when males or females will be choosier and with what benefits. We move from considering *individuals*, as before, to the *population* of all potentially mating males and females. Then the difference between the quantities $(X + 1)$ and $(X - 1)$ is replaced by the variance of female reproductive costs, or $\text{var}(X)$. Likewise, for males the difference between $(y + 1)$ and $(y - 1)$ is replaced by $\text{var}(y)$. (Each of these variances is now an average over all possible male-female matings, weighted, if need be, for the frequencies of each mating.) $\text{Var}(X)$ and $\text{var}(y)$ need not equal each other numerically. Finally, individual values of X and y are replaced by their averages, $\bar{X}$ and $\bar{y}$. Then the text argument shows that the choosiness of males and females is a function of $\text{var}(y)/\bar{y}$ and $\text{var}(X)/\bar{X}$, respectively. (Note that these are *not* variances in an individual's own fitness, but are variances in costs of reproduction, i.e., in prices paid.)

However, to some extent $\text{var}(y)$ measures differences, among *females*, which produce different reproductive costs to males and, likewise, to some extent $\text{var}(X)$ measures differences, among *males*, which produce different reproductive costs to females. To see why, we can interpret $\text{var}(y)$ to measure, in part, variations in *female* fitness, since "low-fitness" females cost the male more than do "high-fitness" females. For example, a "low-fitness" female might not be able to obtain food for herself as effectively as another female; if he mates with the former female, the male must provide more for her, thereby raising his costs of reproducing with her. Likewise, $\text{var}(X)$ measures, in part, variations in male fitness. It then follows that if $\text{var}(X)/\bar{X}$ is small compared to $\text{var}(y)/\bar{y}$, males gain by being choosier than females; if the reverse relationship between the variances holds true, then females gain by being choosier than males. In plain English, this means that if males differ a lot among themselves, thereby increasing $\text{var}(X)$, and also differ more than females do, then females will be choosier. If females differ among themselves more than do males (that is, if $\text{var}(y)/\bar{y}$ is greater than $\text{var}(X)/\bar{X}$), then males gain by being choosier. And this follows since what counts to males is differences in *female* fitness and what counts to females is differences in *male* fitness.

Second, if the relevant differences in fitness ($\text{var}[y]$ and $\text{var}[X]$) are purely phenotypic, then the gains produced by choosiness are limited to the life-time of the chooser and perhaps that of its immediate offspring. However, if $\text{var}(y)$ and/or $\text{var}(X)$ measure genotypic differences in the fitness of the other sex, then long-term evolutionary effects, positive and negative, can be associated with choosiness. The

strength of these evolutionary effects depends on how large such genotypic differences are.

The point here is obvious if we assume that females choose for only *one* male trait—wealth, say—and then assume that men vary in their wealth. The benefit to the choosy female comes from picking the wealthiest male. Now, assume that males also choose among females, and specifically for female wealth. Clearly, the male who chooses the wealthiest female benefits the most. Now, the crux: if the *range* of male wealthiness is much greater than the range of female wealthiness, then females do better by being choosy than do males, since females have a larger range to choose from than do males. Somewhat sardonically, one could say that the question is who does better—a golddigging woman or a Horatio Alger type who wants to marry the heiress? The answer depends on who is more common in the population: wealthy men for the golddigger or heiresses for the Horatio Alger type. When there are more wealthy men than women, greater female mate choosiness can be expected.

In principle, this comparison of variances seems to exhaust the range of possibilities subsumed by the usual Triversian modelling. It does *not* imply that females will inevitably be choosier than males. That depends on what is out there for each sex. However, under modern historical circumstances, where men's wealth has a wider range than women's, the argument suggests that *if* a woman selects a man on these purely utilitarian grounds, then she will be choosier than men. The argument fails if women do *not* choose solely or primarily on such grounds.

The argument has a second implication. Consider the effects on the two sexes of saving the 2 Cal not as a percent of reproductive costs X or y , but as a percentage of *total* metabolic costs of all activities, reproductive or not. Above, I assumed that these totals were very similar for males and females; if so, then the saving from being choosy about a mate is $2\text{Cal}/T$, where T is the total metabolic energy requirement for males and females. However, let us now be more realistic, and assume that because on average males are larger than females, they have higher overall energy requirements for life maintenance. For males, call their total energy requirement T_m ; for females call it T_f . (Explicitly, these T 's include the costs of reproduction: T represents every energy requirement the organism has.) If we now compare the results of saving 2 Cal for males and females, using the new denominators T_m and T_f , we have a measure of how useful it is to be choosy about mates as a proportion of *all* energy expended. We now see that females save more than males by being choosy, since the female's denominator is smaller than the male's. (As a numerical illustration, imagine that T_f is 20 Cal for a given period. Then her saving is $2\text{ Cal}/20\text{ Cal} = 10\%$. For a male in the same period, imagine that T_m is 30 Cal. Then his saving is $2\text{ Cal}/30\text{ Cal} = 6.7\%$. In essence, the difference arises because the female has the smaller overall energy need, so that the gain of choosing is a larger percent of her total.)

Clearly, the assessment of who is choosier than whom depends on what denominator is used in the calculation. If the denominator is the cost of reproduction alone (i.e., Triversian parental investment itself), then, paradoxically, males should be choosier. If the denominator is the total energy requirement, presumed greater for males than for females, then females can save more by being choosy. Moreover, the possibility therefore exists that male and female choosiness may depend on species, and on seasonal or other fluctuations in how reproductive costs relate to overall

energy metabolism. However, I will leave these analyses to others, for I want to return to human courtship, and make some empirical and theoretical evaluations of these different theories of sexual selection.

Biological Models: A Summary

Biological theories of sexual selection and female choice have serious flaws and great strengths. First, they are very weak guides for understanding the ethnography of North American courtship. The failure arises not because the theories were built to explain only animal behavior and to exclude human courtship. Instead, these theories are "covertly ethnographic," in the sense that they pertain to courtship as men (typically) of a certain culture see it, and incorporate unspoken but specific assumptions about women and women's behavior which are so narrow that they misrepresent the complex ethnographic totality of courtship.

Secondly, these theories appear unable to deal with non-utilitarian choices, made not for a man's "quality" in wealth, status, or "good genes," but for his personal attractiveness or for what Westerners often gloss as "love." In this, these models are not so much utilitarian as they are anti-sentimental. Now, I am *not* suggesting that we replace utilitarian models of animal behavior with "romantic" ones. Rather, when we study an ethnographic milieu in which male-female love is a central issue in courtship, we must have theories that deal with love, romance, and attraction as such, rather than treating them as lunacy or as disguises for pure instrumentality or, possibly, greed. Nor am I suggesting that all human courtship involves "love." The ethnographic spectrum is richer than that. But I am suggesting that when we decide to study Western courtship, the biologically-oriented ethnographer or the ethnographically-oriented biologist will need to understand ethologically and ethnographically how love develops during the courtship sequence. The focus on male "quality" and female "whimsicality," so common in the biological literature of sexual selection, is simply too close to saying that if women do *not* choose "quality" men, then they are irrational. It is not a good basis for science.

Third, biological theories of mate selection seem strikingly ungrounded in the ethological details of human courtship. Perhaps biologists do not intend to study men and women; but, if so, then those biologists can hardly object when a biological student of human courtship finds their theories far too narrow and too thin to be of much use. In particular, the biological theories are too thin for understanding what the behavioral and emotional events of courtship *mean* to the participants. If a woman smiles and reaches her hand towards a man, and he takes it and smiles back, does this behavioral sequence "mean" that she is somehow sampling his "quality" as a man or potential father? And, if so, how does her sampling effort correlate, if at all, with his "real" potential, and how does *she* understand the results of her sampling effort?

Yet, one can dismiss biological theorizing too snidely. Above all, it shows us that mate selection is not trivial: underlying all sexual selection theorizing is a firm conviction that mate choices can have powerful evolutionary effects. We must not disregard that insight, even if we cannot use the particular *forms* of sexual selection theorizing that biologists have developed. Indeed, the evolutionary and genetic perspectives force us to recognize that courtship and subsequent sexual intercourse

are the *behavioral mechanisms* of gene transfer, and therefore have immense evolutionary significance. Yet, here too, the biological focus on *male* "quality" can be very misleading, if we assume that evolution proceeds when females choose the "best" males (according to some biological criterion of fitness, e.g., size, Petrie 1983) and that the overall gene pool becomes "better" adapted as a result. Setting aside for now natural selection that works on both sexes, this model of the evolutionary consequences of female choice implies that males provide the genetic raw material for population adaptation, while the females merely select what is best. Unless an equivalent "male choice" exists, this view is absurd, since it is tantamount to claiming that differences among *females* in components of fitness are irrelevant to male reproductive strategies. Accordingly, I suggest that the major insight of sexual selection theory is not its focus on female reproductive choices, but that choices made by *both* sexes are worth detailed and careful study, even if that effort leads away from the purely utilitarian ideal embodied in so much sexual selection theory.

Moreover, the biological focus on the costs and benefits of courtship choices produces some powerful theoretical ideas. Even if this emphasis seems to the social scientist to be old-fashioned (and therefore discredited) functionalism, we should not forget that courtship does have functions, and that achieving them may limit the achievement of other human goals or purposes. Functionalist efforts to understand courtship are not comprehensive, but can be used with sufficient theoretical grace or elegance in certain applicable areas.

These comments apply more to the general shape of sexual selection theory than to the details an observer can see when watching the courtship sequence, or can hear when interviewing men and women. So, it seems necessary to suggest, in preliminary ways, how the details of proceptivity, of escalation and response, and of men's sexual and marital choices might pertain to a sexual selection theory which is based on biology and yet is applicable to specifically defined ethnographic settings.

HUMAN COURTSHIP AND SEXUAL SELECTION

Mutuality

Above all, the data indicate that mate selection is *not* a unilateral choice made by one sex. O'Donald's (1983) image of women choosing men like hair-dryers fails primarily because men are not passive objects of a woman's choice. Like women, men too have preferences which they enact behaviorally. These co-occurring female and male choices are a central part of the courtship sequence, because, together, they create its mutuality.

This mutuality is most clearly seen in the escalation/response process. A woman may "choose" a man in some sense, but if he fails to respond behaviorally to her, courtship itself fails. Contrary to the culturally-widespread stereotype of the ever-ready, ever-ardent male, real men *do* reject women at various stages of courtship.

One (functionalist) explanation is Farrell's (1986): men can become very choosy when deciding to commit their resources and earning power to a woman. In this theoretical perspective, cost assessments are very important for understanding the

man's decision. If he thinks the woman is "flighty" or might be "disloyal" to him sexually or emotionally, no amount of female choice may be able to convince him otherwise. But men also make choices much earlier in the overall sequence, and those choices seem less susceptible to Farrellian analysis. For example, a man may reject a woman after having talked to her for as little as ten minutes. When interviewed, men are not always lucid about why they make such rejections: "She's just not my type," they may say, or that "the chemistry wasn't there." However, these vague comments take clearer form behaviorally.

On one hand, the observer sees that subtly or not, she does not reciprocate his initial overtures and he finally pulls away from her. Thus, he smiles and turns slightly towards her, but she glances away. He offers to get her a drink or some food, and she refuses. No matter what her motivations or intentions, her non-response registers with him, and he says that "the vibes weren't there." He has made the choice not to continue talking to her.

From one perspective, the example may sound as if *she* rejected *him*, rather than the other way round. Yet, from interviews with women, it is clear that sometimes she was not trying to reject him at all. Instead, she may have felt uncomfortable at a party where she knows nearly no one; she might be awaiting the arrival of a woman friend. A wide variety of reasons can underlie her non-response to him, so many, in fact, that it is glib tautology to speak of "female choice" for this situation.

On the other hand, the man himself may not respond to the woman. She smiles, reaches, turns slightly, looks at him—and, at each overture, he rejects her. He glances away, he pulls back, he does not turn, he avoids her eye. Later, he may say that "she's not my type," but, at other times, he might well have responded to her—provided he was less worried about his job, alimony, or a host of other troubles that men sometimes have.

These examples imply that we cannot impute a *unilateral* mate choice to either participant, for either their interest or for their rejection. We can say only that the interaction did not proceed mutually under the specific circumstances observed. And, since it is passage through the sequence that generates mutual emotional and sexual interest, we can conclude that such interest arises only mutually and never unilaterally.

A crucial theoretical point now arises. If we define mate "choice" to refer to actions taken by one partner that *cause* the other person to respond necessarily sexually, then there is no such thing as this kind of mate choice in the settings I have studied. The reason is that it seems empirically impossible to identify any such actions: there is *no unilateral behavior performed either by men or women* that will guarantee or assure the partner's positive response. Instead, mate choice is *a consequence or result of having entered and passed through a long sequence of prior escalations and responses*. (Perper 1985:96–109, discusses a variety of these sequences.) The essence of this characterization of mate choice is its mutuality. Mate selection is not driven or led by females or by males. Instead, empirically we see that it is produced by their interaction.

Here, biological theoreticians seem to have put the causal cart before the horse. By looking at the end result—she is with him, he is with her—the theoretician concludes that the outcome was foreordained when one partner chose the other at the beginning, and for reasons attributable to that partner alone (e.g., by her internal recognition of his "quality," as in the models of male attractiveness dis-

cussed before). Such backwards reconstructions of courtship are fairly common, and not only in biology (Perper 1985:282–286). For example, married couples often look back at their courtship, and tell the interviewer that it was “really” she who chose him, creating the appearance of true female choice. Yet, ethologically, he also chose her, because he responded to her and indubitably made his own overtures to her. Yet, in these “family mythologies,” as well as in more formal theory, the tendency to see *one* person as responsible for the eventual marriage misrepresents the complexities that one observes if one starts in the proper temporal order and begins when they were strangers. And, if we study courtship as it proceeds through the approach to synchronization and/or sexual intercourse, we see empirically that the courtship succeeds not because one partner has the power to cause its completion, but because the two individuals negotiate its stages mutually, reciprocally, and dyadically.

New Definitions of “Choice” and “Selection”

This empirical characterization of courtship requires that the words “choice” and “selection” be reinterpreted. First, they refer to an interactively achieved behavioral outcome, and not to a prior motivational state or decision in which an individual makes up his or her mind that someone will become his or her mate. Such motivations and decisions may exist, but without a cooperative and reciprocating partner, they are not enough to effect a mate choice.

Second, they refer to a series of events, and not to a single decision. Prior to actual sexual intercourse, there is no point when we can say that the decision was made “now” and not at some other time. Courtship achieves mate selection gradually, and not through a quantum leap made once and for all. In the ethnographic milieu I have studied, there is no such thing as “instant intimacy,” and there is no magic phrase or deed that assures the partner’s positive response.

Third, both sexes can make overtures and enact rejections. Most crucially, if a woman’s decision not to have intercourse with a man represents “female choice,” then a man’s decision not to have intercourse with a woman represents “male choice.” The idea that women are always sexually reluctant and that men are always sexually eager must be seen as a *belief*—that is, as part of the North American system for giving sexuality its cultural meanings—and not as ethological truth (Perper and Weis 1987).

Fourth, we cannot presume, as do advice givers, that these choices are made for primarily utilitarian ends. No matter what sexual moralists may say, or want their hearers to believe, strong and mutual sexual attraction is deeply involved in the courtship decisions I have watched. These decisions are not whimsical or arbitrary, but are essential components of much courtship.

Choices for “Quality”?

A particularly important aspect of sexual selection theory that deserves careful scrutiny is the presumption that women choose men for reasons of men’s “quality.”

If the theoretician measures male "quality" by his wealth, status, power or genes, it is not at all obvious empirically that such traits correlate with success in the sequence. The man hard-driven to achieve and maintain wealth and status may treat women's overtures as gold-digging blandishments, and may reject women harshly or abruptly. Or he may accept them as perquisites to his position in society. Still other such men may be genuinely charming and responsive to women. My observations simply do not confirm the existence of any reliable correlation between such measures of "quality" and success with women.

Furthermore, it seems difficult to say that a man's ability to respond to a woman (or to women generally) in the courtship sequence necessarily correlates with his potential quality as a husband, either in its traditional sense of being a financial provider for her and her children, or in more modern senses of giving her emotional support, say, for her career decisions. Indeed, if the courting couple is young, neither of them can really predict their own economic future with any precision.

Accordingly, a woman who marries primarily for instrumental and utilitarian purposes—that is, she selects a wealthy or upwardly-mobile young man *primarily* for those attributes—is gambling twice. On one hand, she is gambling that he will stay "in love" with her, and not leave her (equally instrumentally perhaps) for another woman or, if they are older, for a more attractive younger woman. On the other hand, she is also gambling on the economic system itself and, basically, on its long-term stability. If his fortune is wiped out by one of those economic depressions to which U.S. history has been repeatedly subject; if his land holdings are devastated by war or drought; if his inheritance proves worthless; in brief, if any economic disaster ensues, the rationale for her choice is also wrecked.

With these considerations, I am widening the scope of the discussion from modern North American courtship to a question I raised previously: are some mate selection and courtship strategies basically more adaptive than others? In particular, is the basic human adaptive strategy for women to choose men for measures of their resources, or is a focus on male resource accruing ability a fairly recent historical development?

In its most general terms, the question applies over most of human history and evolution. Resources, be they economic or natural, are never assured with absolute certainty. Accordingly, a man's command over them, and his capacity to allocate them to a given woman and her children, is also never assured with absolute certainty. This fact does not imply that he is fickle in his allocation of resources providing now for one woman, now for another, according to transient shifts in affection or favoritism. Instead, I refer to a far more basic fact of nature (and economic systems): things change. Just as stock markets sometimes crash, so do bad years follow good years, and there is drought, famine, and plague.

I suggest, as Fisher (1982) has also done, though in somewhat different form, that it is nearly always adaptively preferable for the woman and the man to select partners with whom they are deeply bonded. In ethological terms, this selection means staying with, and reproducing with, someone with whom the courtship sequence has been successful. The intense and mutual focus produced by the sequence is not easily broken, for its focus is emotional as well as sexual. It produces a *mutually-mated* couple, if, by that phrase, we mean a couple linked together by mutual interactions that each reciprocates and therefore intensifies.

Curiously, this conclusion solves Halliday's (1983) major conundrum of mate choice made on the seemingly non-utilitarian or arbitrarily whimsical basis of sexual attraction. If nothing intervenes to destroy the liaison that the sequence produces (e.g., parental disapproval), then, from the woman's viewpoint, she has made a good "choice" of a man. Whereas a man she marries for instrumental reasons may abandon her, she can gamble with some degree of assurance that the man to whom she is mutually mated will stay with her. And, if men provide any resources or goods at all, she can rely on such a man more than she can rely on other men. Likewise, if a woman provides goods and resources to a man, then he can be reasonably assured of her contributions to their family (these may be in the form of traditional "woman's work," such as preparing food and clothes, or may take more modern forms of emotional and financial support for him and their children). In an environment with fluctuating resources, the dyad remains relatively stable, because it is tightly and mutually bonded. In this sense, the courtship sequence is "biosocially functional" (Perper 1985:70–74 and elsewhere), because it provides not only the biological and behavioral bases for reproductive gene transfer, but also because it produces a social dyad that can function better than isolated individuals when resource fluctuations do occur. (Informants often provide stories of how their parents survived the Great Depression by staying together, but the conclusion has much wider applicability.)

So, if we are to use the word "quality" at all, it must refer not to a man's social position or wealth, but to his ability to bond mutually with the woman. But that, of course, is *precisely* what the courtship sequence creates and tests between the two individuals. The sequence is neither whimsical nor bizarre. The choices it leads to are not whimsical nor irrational. To the contrary: seen from both social and biological perspectives, the sequence makes very good adaptive sense for both the man and the woman.

Optimization in Male and Female Choice

Yet one must not be Panglossian either biologically or anthropologically. If one adopts the too common (I believe) view that evolution achieves *optimal* life strategies and adaptations, one can invent organisms and cultures more fabulous than real. Both men and women confront certain irreducible costs that cannot be optimized perfectly. The result is that the notion of optimization must be used very carefully. Sometimes, optimization arguments fail to produce observed outcomes. For example, consider the female choice strategies that Janetos (1980) proposed (see above). The strategy that best optimizes the female's choice of the most fit male partner is for her to sample all males and then select the best one. However, this strategy is impossible to enact in the North American courtship system. A potential partner cannot be put on hold while the woman (or man) "samples" others in the population. Rejections are typically permanent, no matter how optimal it might theoretically be if she (or he) could return to a prior potential mate. One reason is that the courtship sequence itself does not return to neutrality when it fails. No matter when they occur in the sequence, rejections leave a residuum of dislike, rendering the rejection not a transitory strategic manoeuvre, but an irreversible severing.

In other situations, strategies that seem theoretically reasonable, if not perfect, encounter unexpected problems. Thus, Wittenberger (1983:439) suggested that another "... approach to choosing mates is to compare prospective mates sequentially and then choose from among the two most recent candidates according to some set of rules." Putting aside the anti-sentimentality of the formulation, it is still true that the woman might date two (or more) men and finally pick the "better" of the two, in a pattern I have called "search polygamy" (Perper 1985:164–166). Yet not all women enact this search strategy, and many men feel that it is "unfair" for women to play two men off each other. Indeed, it is quite possible for one man, upon learning that she is seeing another man, to demand that she choose between them right now (to "make up her mind") long before she herself has made any decision. Or, if a man adopts this strategy, the woman may feel that he is "playing the field," and is not serious about either woman (lying about seeing another woman makes it worse). No matter how optimal the sequential strategy may seem on paper, it has an associated risk of losing both men or of ending up with the "wrong" one.

Thus, ethnographic realities circumscribe the benefits and costs associated with any theoretically possible search strategy. The consequence, I suggest, is that men's and women's actual strategies are never "optimal" in the theoretical sense so often used by biological sexual selection theorists. However, they may be "optimal" in other ways, of being reasonable-seeming *compromises* between various options. Such compromises seem to occur in two situations.

The first occurs when men and women allocate time, money, and, ultimately, metabolic energy to seeking a mate. For men who are looking for a partner, the highest costs are associated with seeking out and wooing a woman (if I may use that old-fashioned term). However, his ability to optimize his allocations and costs depends sharply on factors external to him and not under his control, for example, where he lives in the United States, the availability of socially or personally acceptable places for him to meet the kind of women he likes, and his own financial resources. A man whose employer sends him to a city where there are few women must enact a totally different "strategy" than a man who lives in a city with a bustling singles scene. Likewise, a man with a wide range of preferences for women can enact a different strategy than a man who wants a quite particular kind of woman for a partner. Finally, if he is not rich, his options for wining and dining a woman are not those of a wealthier man, and he must choose among women who care little about expensive restaurants. In brief, there is no single "optimal" strategy or mate choice for a man who wants a woman who both appeals to him and who warmly reciprocates his interest.

It is even more complex to define a single "optimal" pattern for women's search strategies. Not only are women's strategies limited by external factors similar to those which limit men's strategies (location, availability of places to meet partners, finances), but she also brings sexual and emotional expectations to courtship that may limit her search even more rigidly. The best known of these constraints are preferences for men of a certain age range, education, intelligence, and height. (For example, many women find it hard to visualize a really serious relationship with someone both younger and shorter than they.) Indubitably, these limitations arise from ideologies and beliefs about what an ideal, or even acceptable, husband

should be, for example, that he be able to support her financially from the outset, while also being presentable socially to friends and family. However, finding such a man, while simultaneously ensuring that he responds to her emotionally, is no easy task for many women. Such a "perfect" man, if he exists, may define an archetype of male "quality," but, if so, he is more of a dreamt-of ideal than a representative of what women actually find men to be.

On the other hand, a Martian biologist might see nothing biologically "unfit" about a younger and shorter man, nor with a man who is a well-to-do contractor. Yet the woman may want an older, taller man, or a man with an advanced degree. In cultural terms, both male and female mate choices have meanings and rationales that involve more than what a biological calculus might see as theoretically optimal. If we insist on biological optimization, the endeavor may be closer to inventing utopias than seeing how real mate choices involve compromises among many factors, biological as well as cultural, and that overall the system works fairly well, if not perfectly.

There are other ways in which male and female mate choices and their underlying strategies cannot be considered optimal. These concern some presently irreducible differences in male and female reproductive physiology. For women, no amount of care in choosing a man can alter the fact that she, not he, will have to bear the metabolic costs of pregnancy and lactation. Of course, by judicious choice of mate, she may be able to alter other areas of her reproductive costs—e.g., post-natal infant care—but her options are not infinite. From this fact comes the paradox mentioned above that she may save little by choosing one man over another; as long as he is responsive to her emotionally (and therefore responsive in other culture-specific ways, perhaps by being a provider, perhaps by being a wonderful companion), his other attributes may not matter much. By contrast, however, *other* women may feel that they sustain extremely high costs if they marry the "wrong" man even if he loves her (e.g., she is cut off from her family). If, in an economic analogy, the costs of pregnancy and lactation are treated as fixed, then complex strategies can emerge for dealing with other, possibly flexible costs, such as those associated with infant care. Some women may seek a provider-husband; others may rely on their own family of birth for help; still others might become day-care activists. These responses are *all* ways to deal with reproductive costs, and yet none can be called universally optimal for all women, even in one culture. Accordingly, it is foolish indeed to try to reduce these complexities to a single factor—the choice of man—and then try to theorize how the woman might optimize that choice. (In their emphasis on how females choose *males*, rather than on how females make an immense array of reproductively relevant decisions, sexual selection theories seem stuck in a quite old-fashioned view of women's capacities for managing their own lives.)

Men too operate under limitations in how they can optimize their reproductive costs. For most men in the ethnographic settings I have studied, the major costs of reproduction are associated with courtship itself and with later marriage. Focusing on courtship alone, a man can—paradoxically—save a good deal (percentage-wise) by being quite choosy about whom he courts. The paradox decreases if we consider a man who is spending time and money with a woman who does not fulfill his needs, whatever they may be. From his viewpoint such expenses are ill-afforded

if they prevent him from seeking women whom he prefers, or even seeking the company of congenial male and female friends. And, for some men, reproduction is not the all-encompassing good that the sexual selection theorists sometimes believe it is: a man may decide *not* to have children. It is extremely difficult to claim that the "cost" of this decision outweighs the benefits *he* perceives in having no children. (I can only allude here to the great complexities in understanding male childlessness. The subject deserves careful study.)

One additional point about men should be made, concerning male "promiscuity." Usually, it is explained as a result of a Triversian difference in male and female parental investments, with men being more promiscuous (less "choosy") than women because of their lesser reproductive costs. I have said enough, I hope, about the complexities of this argument to make clear that much more is involved. Thus, for illustration, assume that the female's total reproductive costs come to X , and the male's come to y , and let $y = \frac{1}{2}X$. Then, for the same *total* expenditure of energy, the male can, in principle, have *two* potentially fertile liaisons for every *one* that a female has. However, to speak of male "promiscuity" and female "reluctance" for this difference seems to impute a culturally-defined *moral* evaluation to a metabolic difference. In fact, it is possible that the male could choose the two females with great care, while the female might select a male with less care. Thus, we cannot confuse the *number* of liaisons an individual has with the *selectivity* of that person. To be sure, some men are highly partner-independent in their sexual activities, but other men are not. Whereas, in part, we can seek for the origin of male-female differences in modal number of partners in a biological cost analysis, we must look for the origin of a good deal of partner selectivity elsewhere, principally, I suggest, in cultural systems of meaning.

Thus, there are considerable social costs to a woman's becoming pregnant outside of marriage, that is, with the "wrong" man, even if he is biologically ideal: shame, ostracism, and economic hardship (Korman and Leslie 1982; Lees 1986, describes in some detail how the British term "slag" is used to control adolescent girls' sexuality and restrict it to socially approved contexts). So, if the costs to the woman of a "bad" choice of a man—even *once*—are high, it is because social customs, not a biological calculus, sets them high, as is suggested also by the observation that such "costs" have varied considerably over history (Perper 1985:112–125). Thus, if one says that "A woman is making a wise choice not to become pregnant with the wrong man," we are, indeed, speaking of the costs of a biological event, but those costs are socially constructed and construed. They do not inhere in differences between men and women in how much each spends metabolically as a result of a sexual interaction. Socially, the problem was not that she had too many partners (was "promiscuous"); it was her decision to have intercourse with a man not properly "chosen," that is, outside of a socially approved context. With the mere addition of a wedding ring (and, therefore, with full social approval), her behavior and her choice would be deemed quite appropriate, even though her *metabolic* costs were identical. Energy metabolism, no matter how familiar to biologists, does not tell the full story of human mating behavior.

Theoretically and empirically, it is clear that human courtship, even in as limited an ethnographic purview as I have studied, is far more complex and subtle than is represented by most biological sexual selection models. Yet, I also hope it is clear

that with revisions and refinements, those models can serve very useful purposes in showing how *aspects* of courtship follow the biological principles of adaptation, if not optimization. In an imperfect world, the courtship system I have described has, after a fashion, functioned—and perhaps that is all that counts in the long term evolutionary view.

CAVEATS, LIMITATIONS, AND A CONCLUSION

The professional ethnographer may perhaps smile at my effort to infer basic human adaptations from the narrow confines of a single ethnographic example. And, to be sure, such efforts are often very difficult. Yet I believe that the effort must be made, provided we do not draw overly grandiose conclusions.

Above all, I am not claiming that “love,” as Westerners define the term, is anywhere near universal. However, below our own cultural adumbrations on the concept, men and women do bond with each other, and not merely in the modern United States and Canada. Furthermore, male humans do associate themselves closely with groups of females, rather than merely mating and then ignoring the females completely. If these are panhuman characteristics, at least in some sense, then what is important about the ethnography of Western courtship is that we see, in a specific ethnographic setting, how certain inescapable biological needs are met. And, despite modern reproductive technologies like *in vitro* fertilization, sexual reproduction is woven deeply into our biological heritage.

Second, I am suggesting that much more attention be given by anthropologists to the precise behavioral details of how courtship operates in other cultures. Without such data, we cannot infer more closely what is and is not truly “species-specific” about the patterns I have studied. My strong feeling—but it is no more than that—is that several components of North American courtship will prove widespread. These include women’s proceptivity and, at a more ethological level, the occurrence of looking, touching, and synchronization as indexes of reciprocated and intense interest.

Yet, each of these must be expressed in culture-specific forms and ways. A society which sequesters its girls and arranges marriages between near strangers seems to provide women with little opportunity to be proceptive during courtship. But what of the newly-wedded bride? She might be highly proceptive with her new husband.⁴ Likewise, I suspect that in many cultures male responsiveness to women’s proceptivity will be seen (by women) as indicating that the man is a good potential mate. But note that I did not say that male overtures will necessarily be treated so positively by women. Instead, I am suggesting that it may be widespread for women to assess the solidity of a potential match by observing how the *man* responds when the woman expresses interest. If he responds well, then the possibilities are good; if he responds badly, then they are not. Likewise, one wonders if polyandrous mateships are not sometimes established proceptively. By contrast, if we ask about cross-cultural variation in courtship, one possible line of inquiry would be to ask if proceptive behavior depends on male-female power and status differences. Are some societies more openly tolerant of proceptive behavior than others? And, if so, under what circumstances?

Then, concerning mate choice itself, at least outside of societies in which kinship or other rules prescribe absolutely who will marry whom: is there a sense in which male "quality" depends solely or primarily on male status, or do such quality assessments also depend on how a man responds to a woman? And what are the criteria for male mate choice in non-Western societies? Such questions are limited only by the investigator's curiosity. Yet, without answers to these questions, we are limited in what can be concluded about sexual selection in present-day human societies and, therefore, in our evolutionary reconstructions of the role of female and male choice in hominization. It is possible, but I think unlikely, that North American courtship patterns are nearly total aberrations, but we cannot assess the possibility without more detailed cross-cultural data.

And, finally, a conclusion. Many biological models of sexual selection seem unconsciously ethnocentric. Their flaw, it seems, is in elevating recognizably Western and recognizably modern concerns into grand biological principles. If we are not to repeat those errors, courtship must be studied in all its cultural forms and symbolic meanings. We cannot be content with only a few data from one society. Instead, any genuine interdisciplinary effort to understand how men and women meet, court, and finally reproduce must study the full panoply of human variation. Then—and only then, I conclude—will we be able to talk seriously about *human* courtship.

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NOTES

1. North American sexual iconography is quite complex. At one extreme, it involves a tendency to attribute astonishingly mudra-like meanings to body actions (so-called "body language;" see Perper 1985:286–288 for examples and references). At other extremes, it involves several canons of artistic iconography for depicting women (Dijkstra 1986; Kobal 1976), particularly Oriental women (Kabbani 1986), or for simultaneously degrading and exalting women (Michie 1987; Theweleit 1977/1987). It also involves commercial genres such as cosmetic efforts to enhance women's attractiveness (Hatfield and Sprecher 1986; Lakoff and Scherr 1984), a topic that is a mainstay of many women's magazines. But it also ranges to arcana such as erotic bookplates (Kronhausen and Kronhausen 1970) and even to the horror film (Hogan 1986). And, for that matter, *Tibetan* sexual iconography is not simple either (Laughlin 1985).
2. Critics of an earlier draft of this paper raised some objections to this substitution. One asked rhetorically if I disagreed with such obviously "sensible" advice. The comment goes far to prove a point: Halliday is giving advice, even if his original paragraph is written in a "biological" language. In fact, *my* recommendations about who should marry whom are irrelevant. What matters is what Halliday's passage implies about human mating and about how at least some biologists see sexual selection.

The second critic raised a subtler objection by paraphrasing Halliday's passage to make it refer to food:

There are compelling reasons for believing that animals should not eat indiscriminately, but should choose their food. Since objects in the environment vary in their quality as potential food, we would expect natural selection to have favored [sic] mechanisms that ensure that eating occurs with objects of the highest possible quality. The word "quality" is used here to cover a wide variety of properties of individual objects, including calories, vitamins, minerals, freedom from toxins, digestability, cost of acquisition, and lack of parasites.

"What's wrong with that?" the critic then asked.

The answer is two-fold, at least for human nutrition. If the paraphrase means that people have evolved capacities for discriminating between stones and roast-beef sandwiches, I agree. However, beyond that the problem is that the paraphrase does not describe human nutritional capacities. People in fact do not have the discriminatory capacities the paraphrase requires. We lack sensory or organoleptic abilities to detect bacteria or their toxins in contaminated food (e.g., *Salmonella* or *Botulinus*). Nor can we detect the presence or absence of trace or near-trace mineral nutrients, such as molybdenum, zinc, or cobalt. Nor can we determine the presence or absence of most vitamins in food (ascorbic acid is an exception, since it has a characteristic sour taste), nor assess the completeness or quality of ingested protein.

I agree that it would be *nice* if we had these abilities, for they would have saved lives of people eating contaminated food. It would also have saved biochemists, physiologists, and microbiologists untold years of work in identifying our nutritional requirements and in identifying food and water-borne pathogens, like *Salmonella*, or *Vibrio cholerae*. But we do not have such capacities except as they have arisen from knowledge obtained during the (recent) history of biological science.

One can carry this kind of evolutionary optimization too far and create an ideal organism which becomes non-biological. For example, if the reader walked into a restaurant and ordered an egg-salad sandwich, could you tell if it were free of bacteria or not—and, if not, if the bacteria present were pathogenic? (The reader is referred to introductory textbooks in microbiology, nutritional physiology, and biochemistry for additional details.)

This critic also added that he found neither Halliday's formulation nor my revision either "objectionable or illogical." With great honesty, he next added that he spoke as "the product of suburban, homogeneous, 1950s, Populuxe, white bread, middle-middle class midwestern America." Precisely—and that proves my point. Would Halliday's prescription seem so necessarily sensible or logical if he were a French peasant, a Hindu laborer in modern India, or a member of a culture that arranges marriages? If the seeming sensibility and logicity of Halliday's prescription depends on one's culture, then my point is proved: modern Western cultural beliefs, not biology, underlie Halliday's theorizing.

3. For additional discussion of this ideal and its underlying ideologies, see Calder (1976) for the Victorian novel; Lewis (1986) for British aristocratic marriage and birth customs; Brownstein (1982) for the British novel; and Pearson (1957/1980) for the roots of this ideology in Elizabethan times. Lees (1986) provides an excellent comparison for modern British working class behavior and attitudes. Theriot (1983) traces the history of this ideal in recent American politics, and Theweleit (1977/1987) shows how it became profoundly pathological in fascist and pre-fascist Germany. Finally, Hogan (1986) describes how, in modern America, the horror film genre, with its sub-genre, the "slasher flick," punishes drastically and murderously those who deviate from this ideal.
4. I owe this observation to an anonymous questioner in the audience of the presentation at the American Anthropological Association meeting in December 1986, from which this paper has been adapted. I apologize to her for not being able to give her credit for this insight and for raising a fascinating research possibility.

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Note Added in Proof

Although space limitations have prohibited analysis of animal behavior, such as lek formation in birds, a recent proposal is that dominance interactions among male birds alter female choice strategies in leks by limiting choice to one or two “hotshot” birds. Although the idea is a step away from a current preoccupation with “females-have-all-the-power-over-males” models of lek functioning, the idea remains strikingly ethnocentric and, on fuller examination, therefore offers little theoretical help in understanding human courtship. See Lewin [1988] for literature citations and for the use of the term “hotshot” to describe birds.

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